THE AMERICAN ARCHITECT

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THE OLD BAKERY, ERECTED 1683 ON WASHINGTON STREET AND IN 1911 MOVED TO THE REAR OF THE HOUSE OF SEVEN GABLES ON TURNER STREET AND RESTORED

Old Salem Houses

Supplementing a Preceding Article on Samuel McIntire and His Times

By W. H. HUNT, *Architect.*

IN a preceding article on the life and work of Samuel McIntire, architect-builder, it was stated that little was known as to the identity of the architects and builders of houses erected in Salem, Mass., prior to 1780. From that date on, however, it is more certainly known just to whom to attribute the work of Salem's old houses and it is possible for the critical observer to trace the influence of McIntire and his contemporary architect-builders on the many buildings that are yet extant.

An architectural pilgrimage through this quaint New England town is one that will repay the architect and student, and while Salem's old houses and their detailings have been very generally described it will not be without interest, perhaps, further to set down some account of these famous old structures and perhaps add to each some facts of interest not already put into print.

Few cities in the United States can boast of so many well preserved houses still occupied by the best families. It seems almost a miracle that its beauties have been so abundantly preserved. Much of the old woodwork on the exterior and interior of these old houses is in a remarkably perfect condition.

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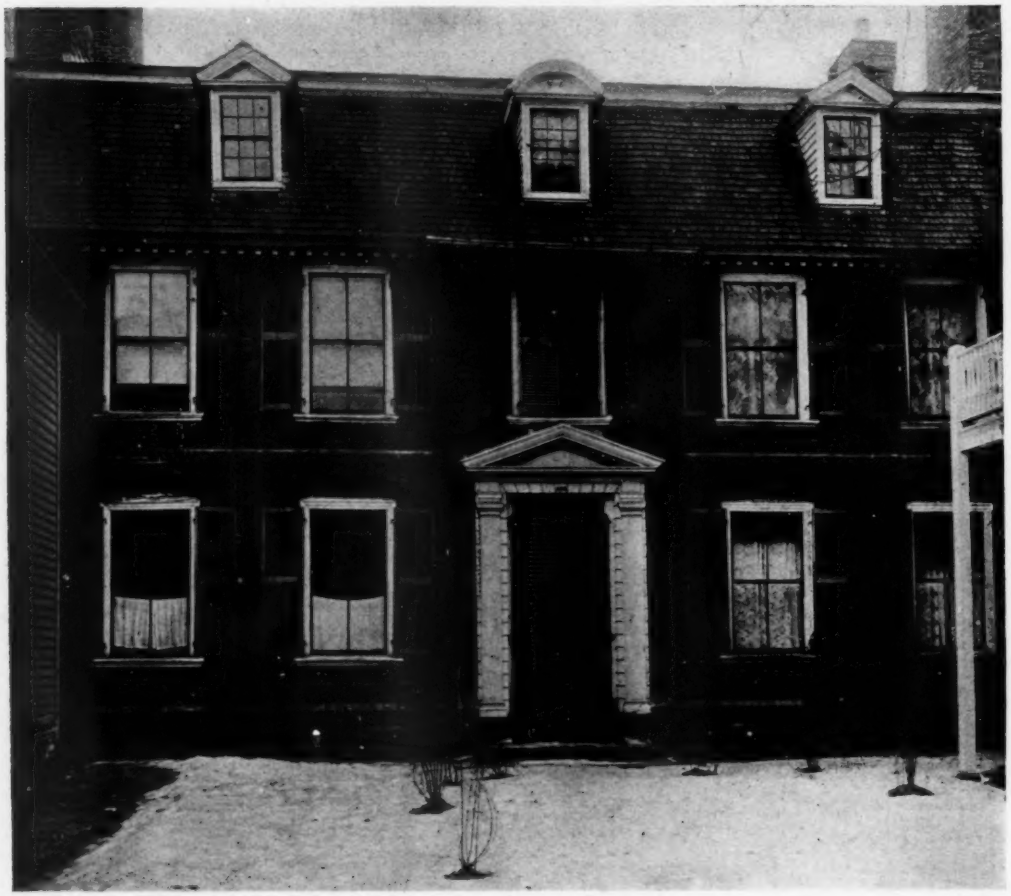
Many of the streets are lined with houses to which most of our old citizens point with pride, because of their well preserved beauty, their age, and the manner in which they have been maintained, in many instances for more than a century. To wander about the old streets and see the old houses and gardens is to see a vivid reflection of that age when Salem was



FRONT ELEVATION
RICHARD-DERBY HOUSE, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*
(This is the oldest brick building now standing in Salem)
ERECTED 1761

counted among the principal centers of culture and wealth. Many leaders in art and science were familiar figures in the streets, and many prosperous merchants and prominent statesmen called Salem their home.

After its settlement Salem quickly attained a great commercial importance. The harbor at that time was one of the best on the New England coast. Shipbuilding became a fine art, and her sailing vessels were considered as good or better than anything on the seas. With great courage and foresight many of these shipowners entered into business relations with the East Indies and other ports of the old world never before reached by trading vessels, and Salem became our chief port of entry many years before Boston, New York or Pliiladelphia were known to the merchants of the East. During thirty years prior to 1811 Salem merchants paid into the Custom House duties of more than eleven million dollars, which gives us some idea of the tremendous amount of their business. It seems that the shipping and the number of vessels sailing from this port had about reached its height at that time. During the

twenty-five years prior to 1807 the shipowners and captains of the vessels trading with foreign ports became very wealthy, and many of them built at that time some of our best old homes, which will be described later in this article. The refining influence of their extensive foreign travels created a natural desire for a better standard of living. Many of them had collected rare furniture, wall papers and objects of art, which called for appropriate home surroundings in which to display them. This provided a higher type of employment for housewrights, skilled joiners and wood carvers, who had had vast experience in the finishing of the finest cabins of the ships, and many of them found employment on the best homes built at that period.

JEFFREY LANG HOUSE, ESSEX STREET, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*
ERECTED 1740—TAKEN DOWN 1900

The early architecture of Salem might be divided into three types developed in different periods. The first type of interest to students of architecture would date from the latter half of the seventeenth century and would comprise the gabled roof and the lean-to house. Prior to that time most of the houses were small gable-roof cottages; then came the larger peaked-roof house, or houses with many gables patterned after the English Elizabethan type. It seemed to be the custom, as larger houses were required, to add a lean-to across the back or along one side. The first houses in Salem of note were of the Elizabethan type, built entirely of wood, brick being little used in those days. Many of these houses were a simple gable-roof structure, and as additional room was needed for the growing families wings and gabies were thrown out as occasion demanded.

Many of these houses were made famous by the writings of Nathaniel Hawthorne. Notable among those was the house at 54 Turner Street, which derived its name from the title of his book, "The House of Seven Gables," and for many years has been known and referred to under that name. Many of the other houses above referred to were drawn upon largely by Hawthorne in his writings. It has been said that the House of Seven Gables was so intimately associated with the story of that name, and in fact with his whole literary career, as to have justified the appellation. For many years this house was occupied by relatives of Hawthorne, and he was a frequent visitor there, and it is said that during his visits he received much of his literary inspiration. It appears that the house was enlarged from time to time, and several alterations to the interior were made; the woodwork of the parlor seems to be of later date than the house. Some time between 1885 and 1890 the big, old-fashioned chimney was removed, and on the fireback was found the date of 1669, which is thought to be the date that the house was erected.

Through the generosity and influence of Miss

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Caroline O. Emmerton, in 1909 the house was restored throughout to practically its former character and made the center of a neighborhood settlement. The Seaman's Bethel, which for many years stood in front of it, has been removed to the rear and altered for settlement needs. This gives a view upon the harbor as it did in earlier days.

The Pickering house, at No. 18 Broad Street, erected about 1660 by John Pickering, is one of the oldest dwellings now remaining in Salem, and one of the few remaining examples of the many gabled houses, we find large rooms. At the right is the library, which was probably a chamber before the room wae enlarged. At the present time it has several bookcases filled with rare old books and has a fine old Colonial fireplace and mantel. Opposite is a large drawing-room filled with Chippendale and Colonial furniture. At the rear is the dining room.

This house is considered one of the most important landmarks in Salem, and has never been out of the Pickering family, and with one exception has descended to a John Pickering ever since it was erected.

PICKERING HOUSE, BROAD STREET, SALEM, MASS. ERECTED 1660

houses with steep roofs patterned after the half-timbered cottages of England.

This house is Gothic and built in the Elizabethan style of architecture, and resembles the famous Peacock Inn in Rouseley, England. The lean-to on the rear has a much flatter pitch than the main house, and appears to be an addition made within a few years after the original house was erected.

About 1841 extensive alterations and repairs were made. The exterior is practically unchanged; the interior shows beamed ceilings and many small windows. Several changes were made to the interior, such as lengthening the hall by removing one of the chimneys. On either side of the hall, as in many old

Few, if any, other historic homes can be found that have been in a direct line of a family for nine generations.

The type of house known as the lean-to is of considerable interest, as they came at a time with the waning of the Elizabethan houses. In some instances they continue certain features of their predecessors, such as the overhanging second story. Builders sought to enlarge the ground floor of some of the old pitch-roof houses by adding a one-story shed roof or single pitch-roof across the rear or at one end. Later, many of the new houses with the lean-to were built as one with the main house. A lean-to was joined to the house in several ways, but was usually

built with a continuation of the back side of the main roof at the same pitch, with the result that while the house was a two-story on the front, it was one-story on the rear. Rarely was a lean-to placed across the gable-end of the main building, except when built on as an addition. Many modern houses of recent date have been patterned after some of the old lean-to houses. Among houses of this type is the Hooper house, known as the "Old Bakery," formerly at No. 23 Washington Street, erected in 1683, a two-story house with the second story overhanging reflect the simplicity of the life and the character of the early settlers. They show us that the necessities were supplied in the most direct way and that very little attempt was made for ornamentation, either on the exterior or interior. The exterior trim, including the corners, verge boards, entrances and windows, are severely plain. The interiors in most cases are very simple, and were a great contrast to the elaboration and decorative detail which we find accompanied the advent of the gambrel-roof house and the Colonial architecture which followed later.

CABOT-ENDICOTT-LOW HOUSE, ESSEX STREET, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*
ERECTED 1745

on the front and a lean-to on the back. The second story, or overhang, is supported by heavy oak girders with chamfered edges and ends carved, showing a simple form of ornamental brackets. The spaces between studding are filled with brick laid in clay. The laths were split from a log. Many features of this building stood in its original condition, and in 1911 it was moved to the rear of the House of Seven Gables on Turner Street and thoroughly restored.

In the John Ward house, originally at No. 38 St. Peter Street, built about 1684 by John Ward, the lean-to across the rear had a flatter pitch than the roof of the main house and was probably added after the original house was erected.

The dwellings before described, without exception,

Gambrel-Roof Houses

The type of dwelling that began to be erected in the latter part of the seventeenth century and the early part of the eighteenth century marked a decided difference from the peaked-roof and lean-to houses before described. During those years the gambrel-roof house was the prevailing style, at first small and very simple, but toward the middle of the eighteenth century it developed into some of the largest and most distinctive types of American residence.

The gambrel-roof represents an evolution of the seventeenth century Mansard roof, designed by the distinguished French architect, François Mansard, in 1598 to 1666, which was extensively adopted in France and other European countries. Quite a few

Mansard-roof houses were built in Salem and vicinity, but did not seem to meet with much favor; therefore a popularity of the gambrel-roof house which came into favor at that time, and has been popular in this section as well as many other parts of the country ever since.

Many of the existing gable-roof and lean-to structures were remodeled into gambrel-roof houses. In most cases, at that period, they were without dormers and devoid of architectural embellishment, either of doorway or exterior trim. Toward the middle of the eighteenth century great improvement was made in the character of the residences. Many merchants and sea captains were accumulating fortunes, and they began to build much better residences than had been the custom hitherto. Their travels brought them in contact with the architecture of foreign countries, and about that period the influence of Georgian architecture began to be felt in this vicinity. New England builders had for ready reference little books of measured drawings of excellent details.

During the eighteenth century there were several gambrel lean-to houses with front showing a gambrel roof with a long, sloping roof on the rear. Among the most noteworthy was the Wheatland house at No. 374 Essex Street, erected about 1773; the Jeffrey Lang house at No. 371 Essex Street, erected in 1744.

One of the first brick houses in Salem was a gambrel-roof residence built by Richard Derby in 1761 at No. 168 Derby Street. This house is of Georgian type. It has a fine classic doorway built of wood worked out in imitation of marble. The feature of the brickwork is seen in the projecting band at the level of the second floor. There are two large chimneys at each end of the house, the brick gable being carried up between the chimneys, making the chimneys part of the structural walls, the outside being flush with the outside of the chimneys. This gable construction became a prominent feature in many of the brick houses of later date.

One of the best houses built in the eighteenth century of the gambrel-roof type is the fine old house at No. 365 Essex Street, known as the Cabot-Endicott-Low house. This dwelling was erected in 1745 by Joseph Cabot, from the design of an English architect, who was also the architect for several of the best residences built in New England about that period. This house is of the purest Colonial type, and for years has been a subject of great interest to architects all over the country.

The gambrel-roof is well proportioned; there are five closely spaced dormer windows on the roof, the center one having a segmental pediment, and the two at each side having gables. The gutter and verge boards are all molded, and the door and window trim throughout show Georgian type. The doorway is elaborate and well proportioned. This house is noted for its interior woodwork. A large hall running through the center has one of the best stairways to be found in Salem, with its twisted newel post and balusters, and heavy molded mahogany rail. The box stairs with paneled ends show decorative brackets. Of special note is the fact that the twisted portion of the balusters at each tread differs, although the tops and bottoms are alike. The newel post and balusters, which are hand-carved and turned, represent a direct development of work found in ship cabins in their likeness to rope molding so much used in those days.

Of the gambrel-roof houses built in this section of New England it seems that no recognized rule was followed for the proportion or pitch, but the roof was adapted to the general size and character of the house.

The Three-Story House

In the latter part of the eighteenth century, the square three-story wooden house became the prevailing style. The third-story windows in most cases were shortened. Several were built with a gable-roof with quite a flat pitch, similar to the Stearn's house at 384 Essex Street. Most of the houses of that period had plain clapboard walls, but occasionally we find them with quin corners to represent marble.

The houses of this period are usually referred to as square three-story structures, but we find many of them oblong; some with the short side fronting on the street, and others the long side on the street. Most of the houses of that type had an ell at the rear, providing kitchen and service rooms on first floor and servants' chambers on the second. In many of them the ell was two stories in height, and in many cases the stories were of lower stud in the ell than in the main house, the first floor being on the same level and the second floor two or three steps down from the floor of the main house.

Very few of those substantial three-story mansions are to be found outside of New England, and nowhere in such number and perfection as in Salem. They possess a certain architectural stateliness and as the town building sites were somewhat restricted in area they appear practical. We find that the remarkable craftsmanship of the time asserted itself upon the exterior, and we have many examples of the genuine distinction and rare beauty imparted on those square box-like structures, through the agency of fences, gateways, entrance porches, door and window heads, etc. Most of these mansions were built by sea captains and merchants who had become wealthy through their East India trade. Many of them felt the need of a look-out to watch for the return of their vessels, and therefore built a cupola on the roof. One of the best examples of the cupola popular in those days still exists. It was on the Pickman-

Derby-Brookhouse mansion at No. 70 Washington Street. The house was razed in 1915 to make room for the new Masonic Temple started that year, but the cupola was moved to the garden of the Essex Institute.

The Stearns house at No. 384 Essex Street, erected in 1776, is of the oblong shape, the broad side on the street with a rather flat gable. The house is notably attractive for its handsome Doric porch, designed and added by Samuel McIntire in 1785. It will be noted from the illustration that this porch differs from many others in Salem by the addition of flat pilasters at each side, which give increased breadth and dignity. Although it seems well proportioned for this particular house, it would be better suited to public buildings than residential work.

National Council of Architectural Registration Boards

A general statement with special reference to examinations and qualifications of applicants to practice architecture has been prepared by the National Council of Architectural Registration Boards.

Applicants will be divided into two classes, Junior and Senior.

The Junior Class will include those having less than ten years' proved architectural practice as a principal or one of a group of principals in charge of an architect's office, and all falling under this group should be required to take a written and delineation test, supplemented by a verbal quiz at the discretion of the examining committee, which shall embrace the subjects and time requirements set forth in the Standard N. C. A. R. outline for such examination.

The Senior Class will be made up of those having ten or more years' proved architectural practice as a principal or one of a group of principals in charge of an architect's office engaged in the practice of architecture as a profession. The examination of the latter class is to be by exhibits of sketches, working drawings, details, and specifications prepared under the personal supervision of the applicant, supplemented by a verbal quiz as to the reasons for methods used, procedure shown, and evidence of authorship; these to be supplemented by proof of honorable practice, photographs of executed work, or any or all of these, which in the judgment of the examining committee are necessary to determine the applicant's qualifications as an architect. These qualifications in the opinion of the examiners shall be equivalent to or superior in relative value to the requirements set forth for applicants having had less than ten years' experience.

This statement sets forth at considerable length, but very clearly, the essential qualifications and minimum of educational and practical experience as regarding proper preparation for entrance upon the independent practice of architecture as a profession. Natural ability is logically placed first among these essentials.

The details of the examinations in these two classes have been very carefully worked out and it is believed they would meet all of the minimum requirements of all States having laws regulating the practice of architecture. This part of the report has been covered in the most exhaustive and thorough way.

Circular of Advice No. 2, from which the foregoing information has been gleaned, is a voluminous document, but sufficiently important to warrant perusal by every member of the profession of architecture. It shows a most comprehensive grasp of the now all important matter of architectural registration. The work of this Council has from the outset been thorough and efficient. If its work is properly endorsed by the profession and its recommendations generally approved, it will secure results of lasting value to every member of the architectural profession. The address of the National Council is 3230 W. Monroe Street, Chicago.

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Old Custom House, Philadelphia, Pa.*

(See reproduction of original drawing by O. R. Eggers on opposite page)

THIS fine old building was built in 1819 *for the United States Bank. In* 1845 *it became the Custom House.*

Designed by William Strickland, it represents his work at the early period of his activities as an architect.

William Strickland and Robert Mills, cotemporaneous, dominated the public buildings in this country. They dictated the public taste in architecture for a full generation.

The classic or Greek Revival was the dominating motive of all of their buildings and it is safe to assume that the structures erected by the government from about 1820 *were either designed or largely influenced by either Strickland* (1787-1854) *or Mills* (1781-1885).

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*The correct title of the subject presented on the following page is as stated in the heading above. The error in title was discovered too late for correction on the accompanying drawing.

OLD CUSTOM HOUSE, PHILADELPHIA, PA.
THE AMERICAN ARCHITECT Series of Early American Architecture

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EDITORIAL

Announcement

SINCE the close of the World War THE AMERICAN ARCHITECT has increased the number of its subscribers 68 per cent. In fact, there has never been a time from its foundation, in 1876, that this journal has shown greater progress than has marked it since the Armistice.

Nevertheless, its publishers have, during recent months, sensed changed conditions. It finally became quite apparent to them that new viewpoints have been developed, and new habits have been formed. In their constant effort to meet, as nearly as possible, the needs of their readers, they have conducted an extended investigation, and, as a result, have reached the conclusion that the requirements of the majority could now be more closely met by a bi-weekly publication than by one of either more or *less* frequent issue.

Accordingly, beginning in May (issue of May 11), THE AMERICAN ARCHITECT will be published every other Wednesday. The subscription price for delivery in the United States and possessions will be reduced to $6.00 per year.

THE AMERICAN ARCHITECT has in the past been a practically indispensable aid in the larger architectural offices. Under the new plan, it is proposed to produce a magazine to which every office, no matter what its volume of work may be, can afford to subscribe. It is perhaps unnecessary to add that THE AMERICAN ARCHITECT as a bi-weekly will be a larger magazine, of better appearance and one the publishers believe will merit unqualified approval.

Publishers,
THE AMERICAN ARCHITECT.

Annual Convention of the A. I. A.

THE annual convention of the American Institute of Architects, to be held in Washington in May, will undoubtedly be one of the most important of recent years. The Illinois Chapter, with a view to securing the largest measure of constructive effort, has, by a series of resolutions, presented to the Board of Directors, sought to suggest a certain line of procedure that will secure that desirable result. The problems that now confront the profession are serious and practical ones. It is sufficiently guarded by canons of ethics, of circulars of advice. These at best are but academic matters and, as a fact, are sometimes more honored in the breach than in the observance.

The architectural profession may, as far as practical effort is concerned, seriously study what the engineering societies, the contractor-builder organizations have been doing and what, in doing those things, they have really accomplished.

We have always had reason to mention approvingly the very fine and thorough reports that are presented at Institute conventions each year, just as we have had reason to deplore their ultimate fate and the lack of continuation of effort along such well-planned lines. It would be better to take one large outstanding problem, and try for its solution, than to spend hours in the academic discussion of a lot of matters purely visionary.

The Illinois Chapter has suggested that the convention seriously concern itself with legislation now pending that directly affects the practice of architecture. The suggestion would seem to be a good one.

Sketching for Architects

VACATION time will soon be here. Perhaps, in view of the stagnation in building, most architects will not need a vacation. Also, perhaps the sort of a "vacation" they would most enjoy would be one of old-time, strenuous activity in the service of clients. But when the "Call of the Wild" is heard, and the lure of green fields is felt, most men will welcome and seek a change from the drab monotony of life in cities.

Architects need to have a good sense of form and color. Of course, they must know how to draw and be able to set down their impressions. No form of recreation brings with it larger compensation than sketching from nature. The man who will take a sketch box, go afield and spend a few hours each day in painting, will have found the most mind-resting thing there is.

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Beaux-Arts Institute of Design

DIRECTOR OF THE INSTITUTE, LLOYD WARREN

ARCHITECTURE, RAYMOND M. HOOD
SCULPTURE, JOHN GREGORY

INTERIOR DECORATION, ERNEST F. TYLER
MURAL PAINTING, ERNEST C. PEIXOTTO

Official Notification of Awards—Judgment of March 8, 1921.

FIRST PRELIMINARY COMPETITION FOR THE 14TH PARIS PRIZE

of the

SOCIETY OF BEAUX-ARTS ARCHITECTS.

PROGRAM

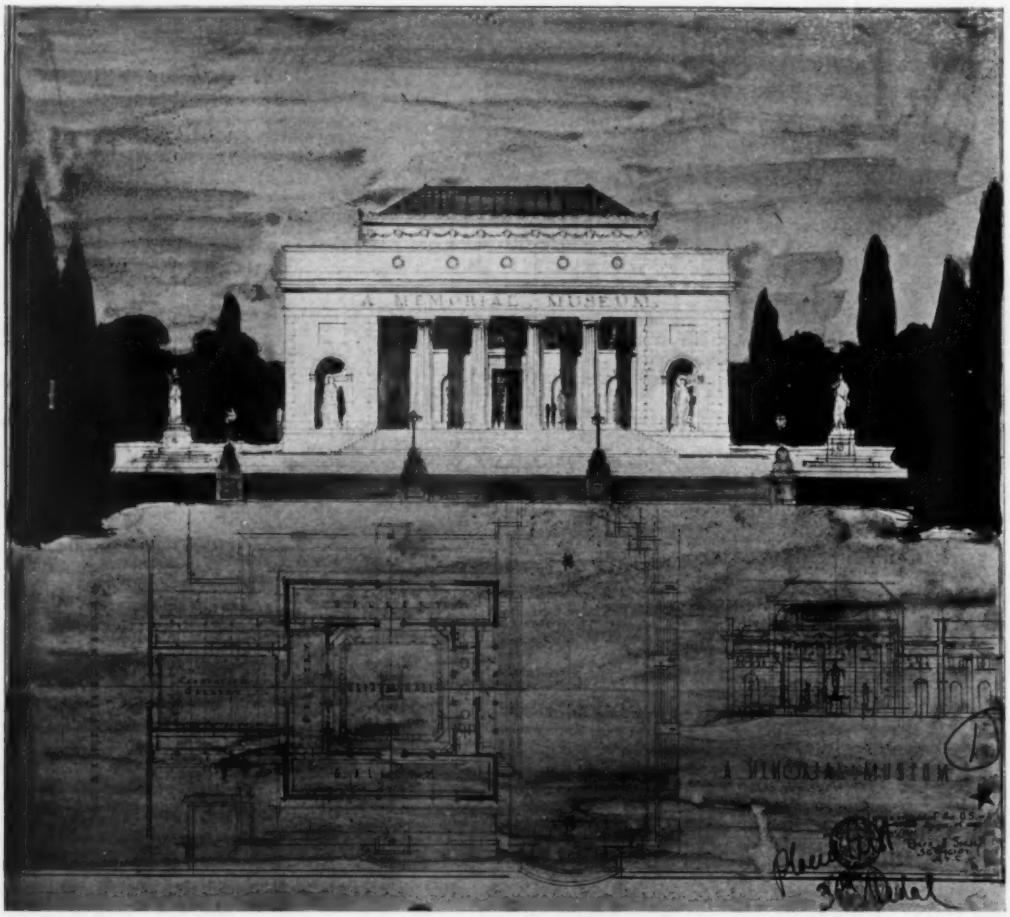
The Annual Committee of the Paris Prize proposes as subject of this Competition:

A MEMORIAL MUSEUM

GENERAL:

A wealthy patron of the Arts has bequeathed to the people of his city his collections of paintings, sculpture, furniture and ceramics with a provision that these collections be permanently and suitably housed in a special building bearing his name. It is proposed to erect this Memorial Museum in the grounds where the City Museum of Art is already situated and to connect them by an enclosed arcade, colonnade, gallery, or loggia.

The Memorial Museum (like the City Museum) shall face a wide parkway and be entered across a spacious forecourt slightly higher than the level of the parkway and treated in such a manner as to give a proper setting for several of the larger marbles or bronzes forming part of the collections. The building shall be one story high and shall contain, in addition to the gallery or galleries for the collections, an entrance vestibule, check room, toilet facilities for both sexes, and a small room for the sale of photographs of the collections.



R. H. SEGAL — NEW YORK CITY

PLACED FIRST (3d MEDAL)

FIRST PRELIMINARY COMPETITION, PARIS PRIZE

DIMENSIONS:
The plan of the building shall not exceed 100 in its greater dimension.
JURY OF AWARD:
L. Warren, R. M. Hood, J. M. Howell, J. G. Rogers, C. Gilbert, W. S. Wagner and H. O. Milliken, chairman.
NUMBER OF DRAWINGS SUBMITTED: 102.
AWARDS:
Placed First (3d Medal): R. H. Segal, 56 West 46th Street, New York City.
Placed Second (1st Mention): R. H. Douglas, Pittsburgh A. C., Pittsburgh.
Placed Third (3d Medal): H. S. Atkinson, "T" Square Club, Philadelphia.
Placed Fourth (3d Medal): S. P. Stewart, University of Illinois, Urbana.
Placed Fifth (3d Medal): R. W. Craton, 430 West 118th Street, New York City.
Placed Sixth (1st Mention): L. Simpson, Washington University, St. Louis.
Placed Seventh (3d Medal): L. H. Pries, University of Pennsylvania, Philadelphia.
Placed Eighth (3d Medal): O. M. Olsen, University of Pennsylvania, Philadelphia.
Placed Ninth—First Alternate (3d Medal): L. S. Lashmit, Carnegie Institute of Technology, Pittsburgh.
Placed Tenth—Second Alternate (3d Medal): S. F. Swales, 543 West 123d Street, New York City.
Third Medal: G. D. Conner, Chicago School of Architecture, Chicago; L. Rich, Atelier Corbett-Gugler, New York City; A. E. Anderson, Pittsburgh A. C., Pittsburgh.
First Mention: J. T. Cronin, care Coolidge and Shattuck, Boston.

Mention: H. T. Aspinwall, Carnegie Institute of Technology, Pittsburgh; G. Fraser, R. D. McPherson, H. G. Banse and F. H. Robinson, Cornell University, Ithaca; I. J. Loemb, Chicago School of Architecture, Chicago; H. W. Gill, Columbia University, New York City; R. L. Linder, Atelier Denver, Denver; L. A. Kruse, Harvard University, Cambridge; M. Jaeger, Jr., Atelier Hirons, New York City; W. F. Kussin, 110 State Street, Boston, Mass.; N. Larson, Post and Lintel Club, Minneapolis; W. S. Arrasmith, University of Illinois, Urbana; G. K. Geerlings and R. S. Potter, University of Pennsylvania, Philadelphia; O. Thorshov, University of Minnesota, Minneapolis; F. R. Hammond, Washington University, St. Louis.

Official Notification of Awards—Judgment of January 4, 1921.

PROGRAM

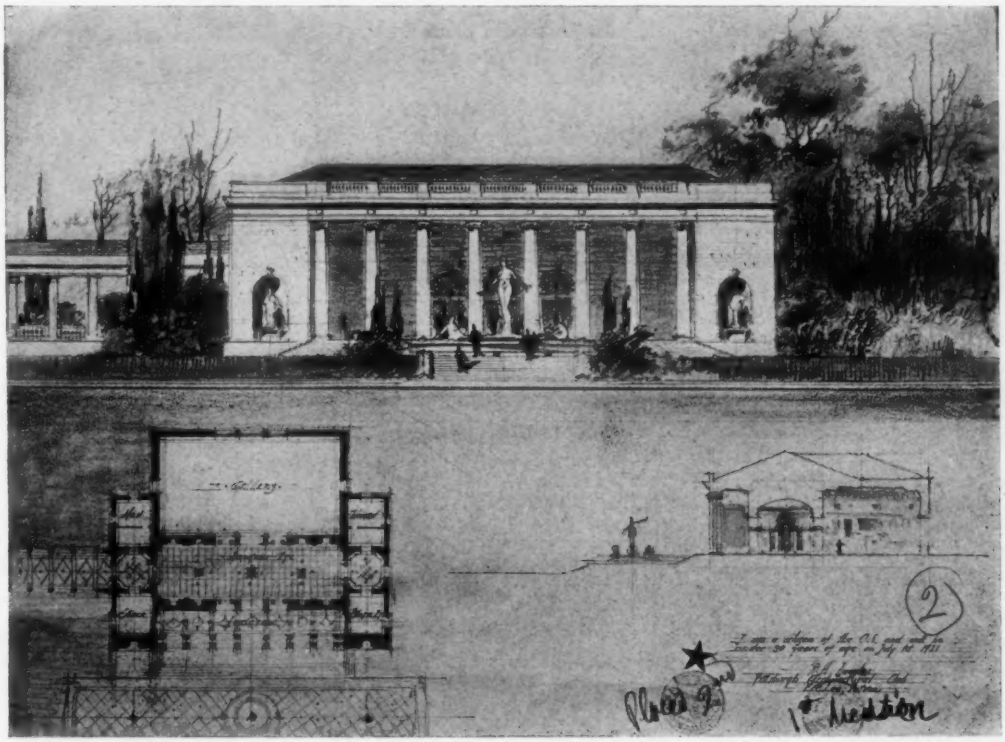
CLASS "A"—II PROJECT

The Committee on Architecture proposes as subject of this Competition:

"A STAIRCASE HALL"

The entrance floor of a city hall is connected with the main floor by a monumental staircase, which gives access at the upper level to the municipal council rooms and the mayor's offices. From this point on, secondary stairs lead to the upper floors.

The staircase should be designed to accord with the importance and sumptuous character of the rooms it serves, and the hall in which it is placed may be developed as a feature of the exterior composition of the building if desired. It is of great importance so to study the natural lighting of the staircase hall that it shall not only be



R. H. DOUGLAS — PITTSBURGH ARCHITECTURAL CLUB

PLACED SECOND (1st MENTION)

FIRST PRELIMINARY COMPETITION, PARIS PRIZE

ample and adequate, but also so arranged as to harmonize with and emphasize the architectural treatment of the interior. The disposition of the rooms and courts about the staircase hall is optional, save that on the first floor it should open directly out of the entrance vestibule. The distance from the first to the main floor level is 22'0". The entire height of the staircase hall is not limited, but its maximum floor area, measured within the walls of the surrounding rooms or courts, shall not exceed 9,000 square feet.

JURY OF AWARD:

R. M. Hood, F. A. Godley, F. C. Hirons, H. Hornbostel, H. W. Corbett, H. Davenport, H. Boehm, F. A Nelson, W. Van Alen, P. P. Cret, L. P. Burnham, G. Howe, C. Mackenzie and H. B. Herts.

NUMBER OF DRAWINGS SUBMITTED: 71.

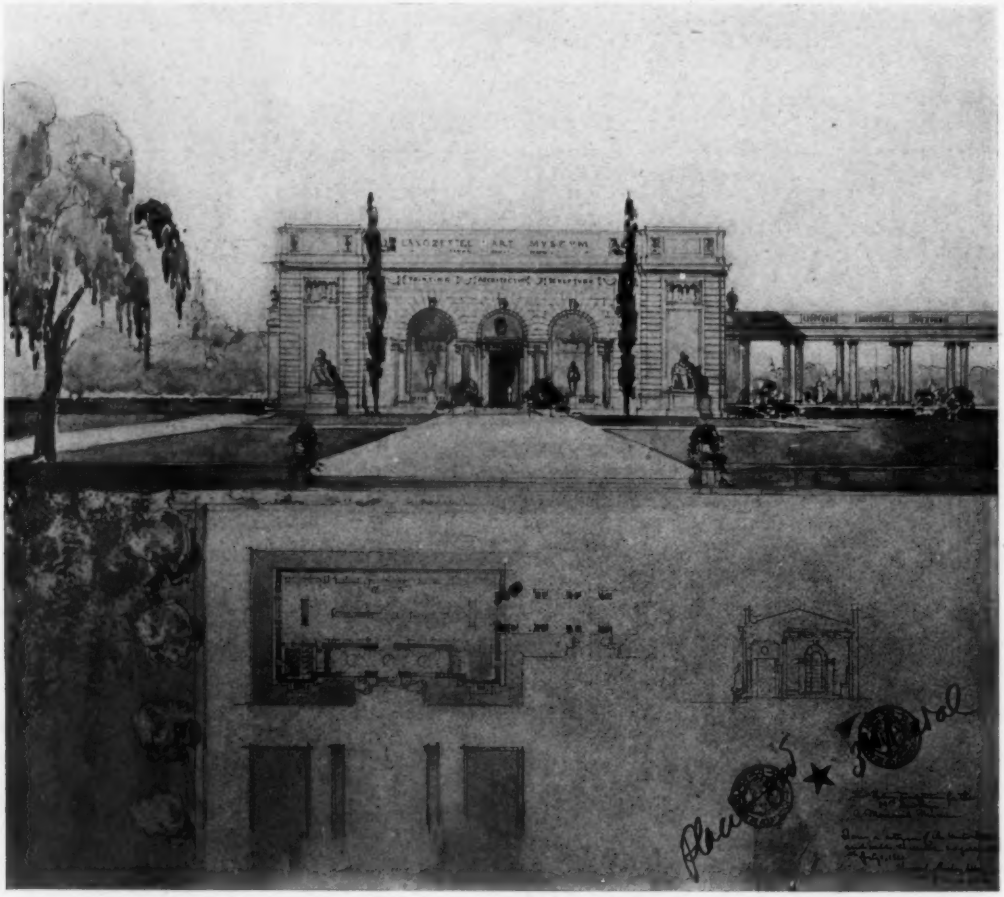
AWARDS:

First Medal: L. S. Lashmit and B. Dierks, Carnegie Institute of Technology, Pittsburgh; R. H. Bickel, Columbia University, New York City; G. K. Geerlings, University of Pennsylvania, Philadelphia.

Second Medal: M. Pohlmeyer, L. J. Rockwell and P. F. Simpson, Carnegie Institute of Technology, Pittsburgh; K. Carver and E. K. Hunter, Cornell University., Ithaca; D. R. Everson, Columbia University, New York City; R. DeGhetto, Atelier Hirons, New York City; A. Westover, Jr., "T" Square Club, Philadelphia; R. A. Fisher and G. W. Green, University of Pennsylvania, Philadelphia.

Mention: W. J. Perkins, H. A. Wieland, F. K. Draz, R. Schmertz, C. W. Hunt, H. T. Aspinwall and R. M. Crosby, Carnegie Institute of Technology, Pittsburgh; H. Nolan, E. B. Mason, R. D. McPherson, C. M. Stotz, G. Fraser, W. H. Harrison, T. Yokogawa and F. L. Abreu, Cornell University, Ithaca; H. J. R. Barrett, C. Contreras, C. H. Sherwood, E. W. Burkhardt and H. W. Gill, Columbia University, New York City; I. J. Loebl, S. C. Levi, H. L. Fassett, N. J. Schlossman and E. J. Manning, Chicago School of Architecture, Chicago; L. F. Fuller, Los Angeles A. C., Los Angeles; R. L. Goldberg, L. Z. Slawter and E. C. K. Schmidt, "T" Square Club, Philadelphia; G. K. Trautwein, G. A. Barry, K. A. McGrew, C. E. Jenkins, J. T. Briggs, E. O. John, L. H. Price and G. P. Turner, University of Pennsylvania, Philadelphia; W. M. Icenhower and L. F. Soxman, University of Kansas, Lawrence; T. F. Price, F. Elsasser and P. Jensen, Atelier Wynkoop, New York City; R. B. Thomas and L. Hamilton, Yale University, School of Fine Arts, New Haven.

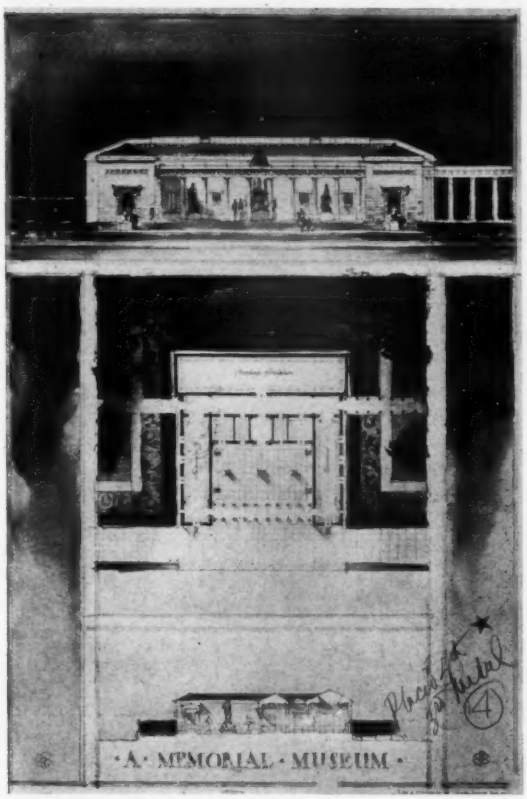
H. C.: B. E. Irby and Mary L. Abbott, Columbia University, New York City; J. Lucchesi, Atelier Hirons, New



H. S. ATKINSON — "T" SQUARE CLUB, PHILADELPHIA

PLACED THIRD (3d MEDAL)

FIRST PRELIMINARY COMPETITION, PARIS PRIZE



S. P. STEWART UNIVERSITY OF ILLINOIS

PLACED FOURTH

FIRST PRELIMINARY COMPETITION FOR THE 14TH PARIS PRIZE

York City; S. J. Laschenski, University of Pennsylvania, Philadelphia.

PROGRAM

CLASS "A"—II ESQUISSE-ESQUISSE.

The Committee on Architecture proposes as subject of this Competition:

"AN ENTRANCE TO A DANCE HALL"

As this establishment is only open at night, the appearance of the entrance by daylight is of minor consequence. The problem is essentially one of a night effect, produced either by an architecture of electric lights or an architecture artificially lighted by concealed or exposed lights.

The first requisite of the design of this entrance is that it should have "character," that is, it should express the use of the building to which it gives admittance. It should therefore be gay, festive and smart, with gracious curving lines and as it is to be a money-making venture it should also be arresting, inviting and if possible intriguing.

The problem is the composition and complete decoration of the entrance, which has a frontage of 25′0″ on a sidewalk which is 10′0″ wide. The owners are willing to give up an additional 10′0″ to a recessed entrance motive, level with the sidewalk and extending to a height not to exceed 25′0″. There should be an iron and glass marquise covering the entire sidewalk in front.

There will be no exterior ticket booth as in the movies, but space should be definitely arranged for posters and illuminated signs.

JURY OF AWARD:

W. F. Lamb, J. W. Cross, Mr. Koyl, M. Prevot, H. R. Sedgwick, H. O. Milliken, T. Holden, H. P. Pennington and G. S. Parker.

NOTE: This Jury also served as Jury of Award for the Class "A" II Esquisse-Esquisse, Class "B" II Esquisse-Esquisse, and Class "A" & "B" Archaeology-II Projet.

NUMBER OF DRAWINGS SUBMITTED: 26.

AWARDS:

Third Medal: G. Chittenden, Los Angeles A. C., Los Angeles; R. S. Potter, University of Pennsylvania, Philadelphia.

Mention: R. K. Galbraith, Architectural League of Indianapolis, Indianapolis; L. F. Fuller, Los Angeles A. C., Los Angeles; R. F. Larson, University of Pennsylvania, Philadelphia; F. A. Chapman, Atelier Wynkoop, New York City.

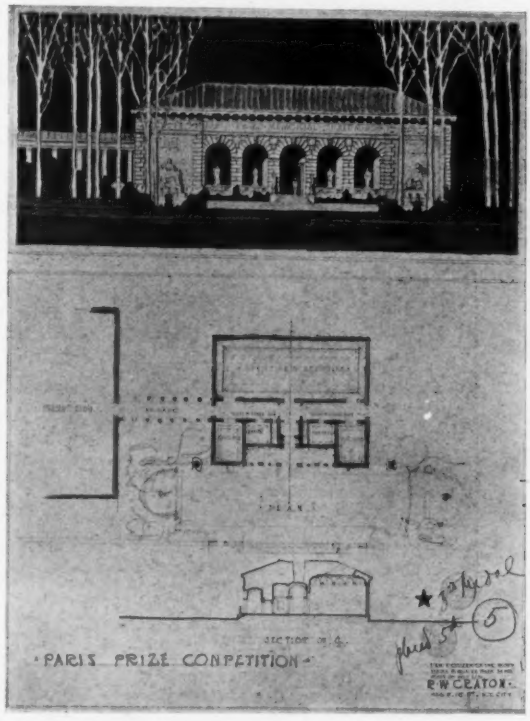
PROGRAM

CLASS "B"—II ESQUISSE-ESQUISSE

The Committee on Architecture proposes as subject of this Competition:

"THE DECORATION OF A CITY GARDEN"

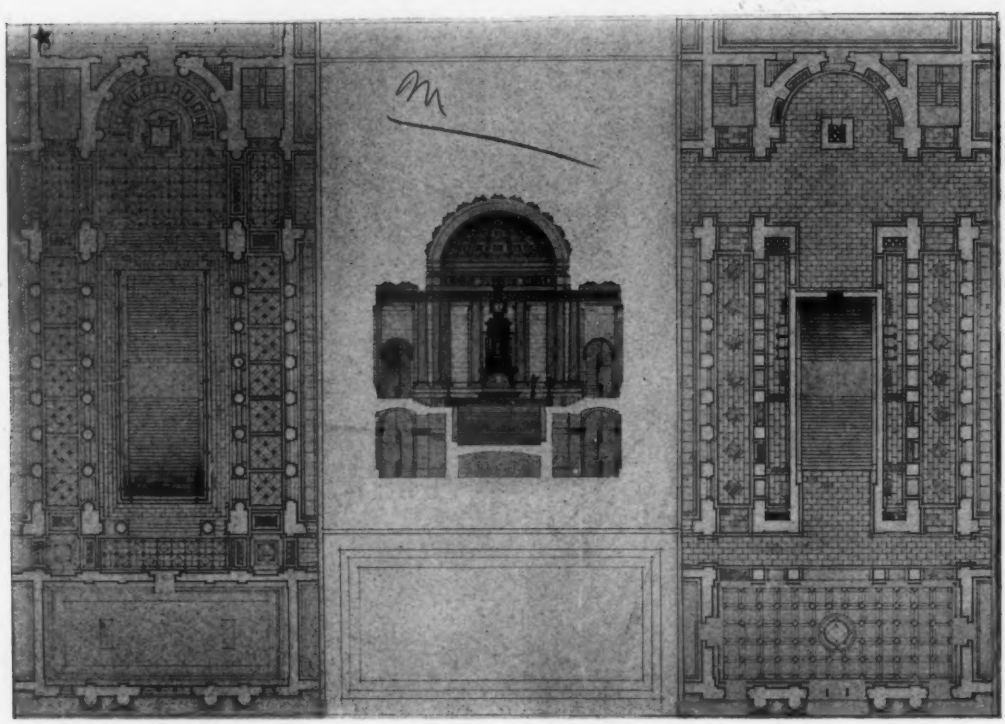
The difficulty of obtaining suitable apartments and houses for rent that has been experienced in most of our cities for the past year or more, has been met in some degree by a person or a co-operative group buying a row of old houses and remodelling them to suit modern conditions. This

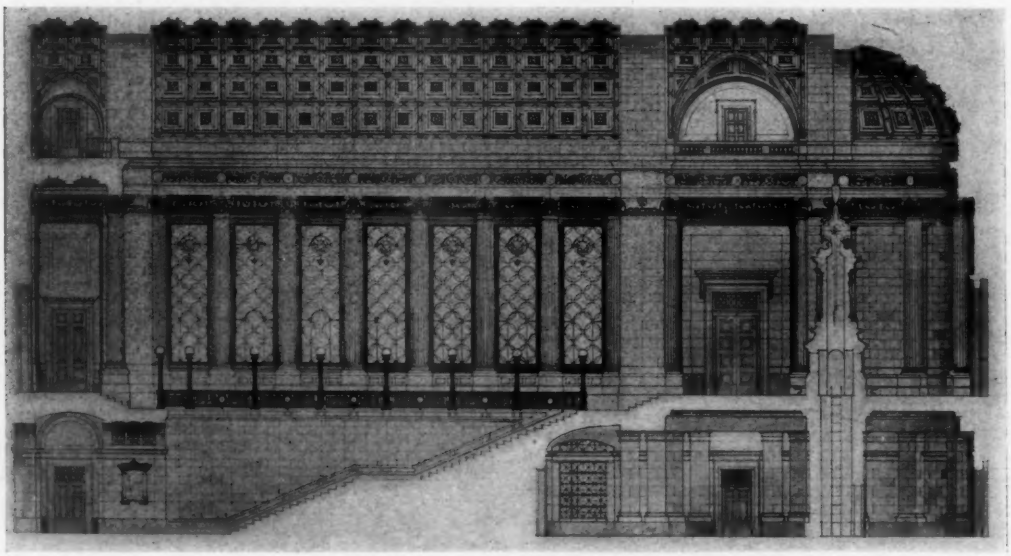


R. W. CRATON NEW YORK CITY

PLACED FIFTH

FIRST PRELIMINARY COMPETITION FOR THE 14TH PARIS PRIZE

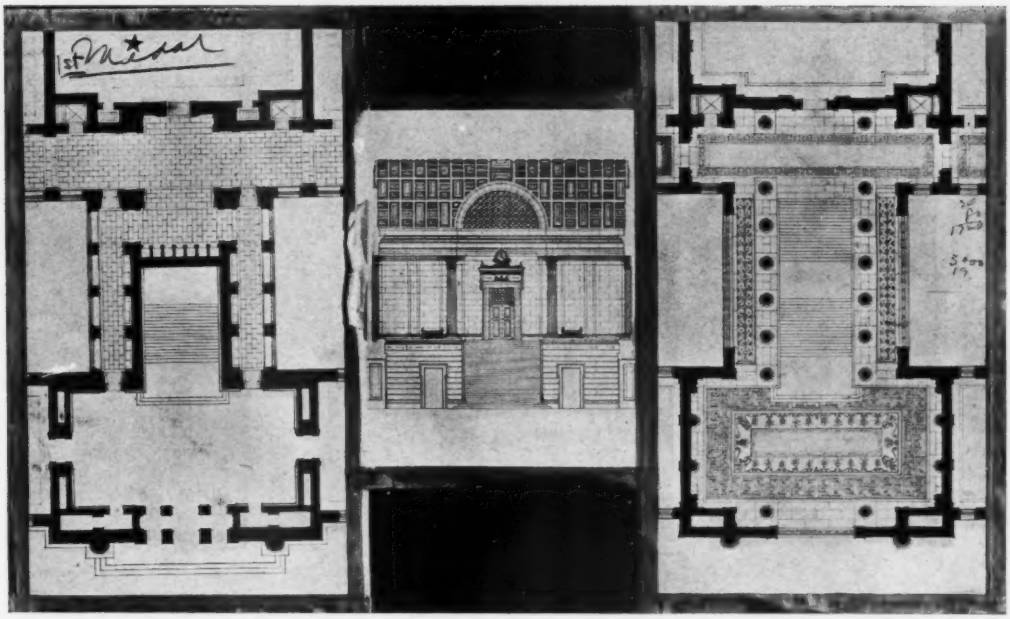


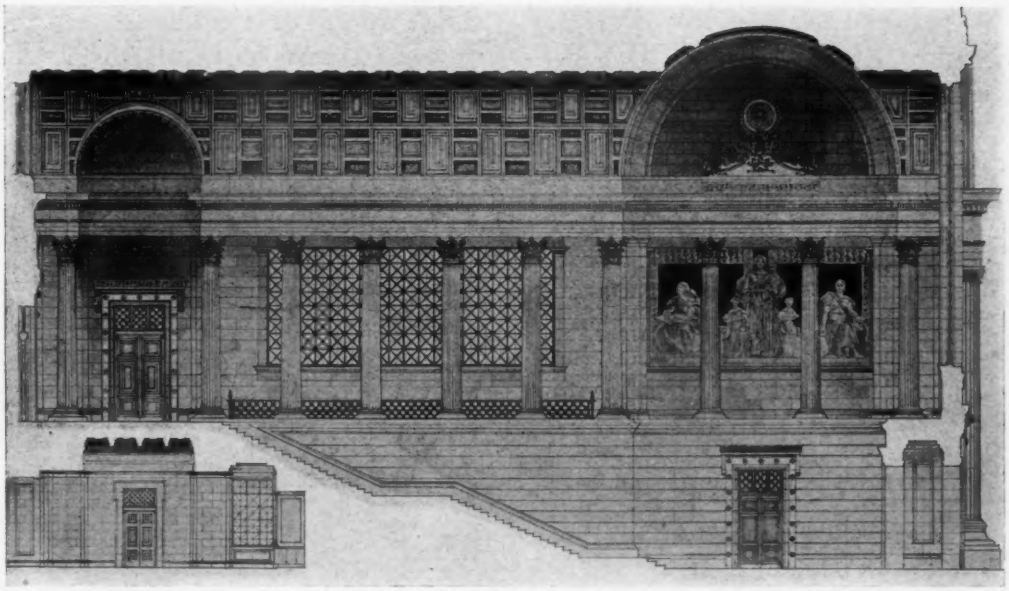


FIRST MEDAL L. S. LASHMIT CARNEGIE INSTITUTE OF TECHNOLOGY

CLASS A-II PROJET. A STAIRCASE HALL

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN





FIRST MEDAL B. DIERKS CARNEGIE INSTITUTE OF TECHNOLOGY

CLASS A-II PROJET. A STAIRCASE HALL

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

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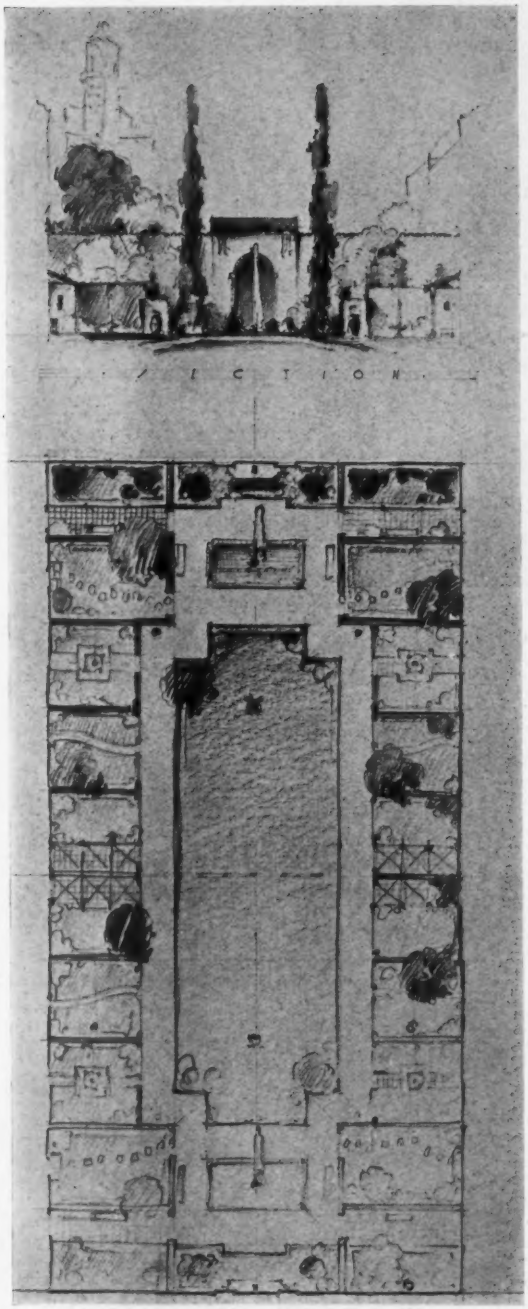
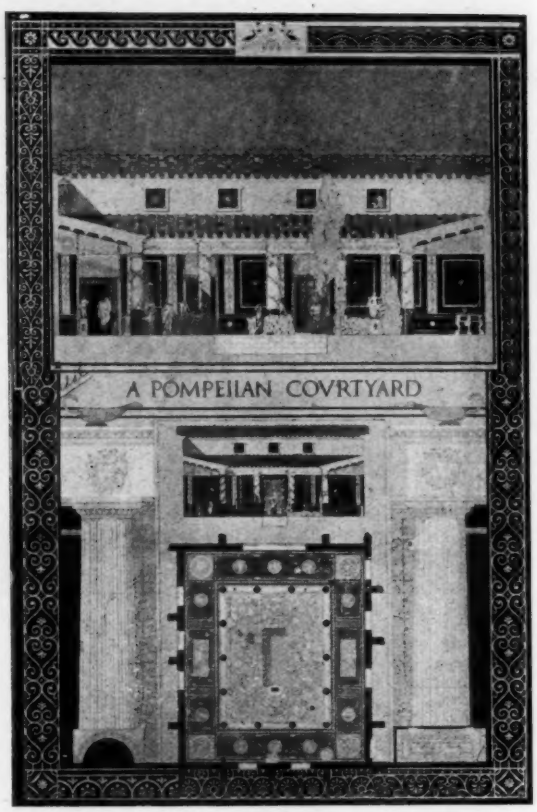


CLASS B-II. ESQUISSE-ESQUISSE
THE DECORATION OF A CITY GARDEN
FIRST MENTION—J. WESTON
Los Angeles Architectural Club



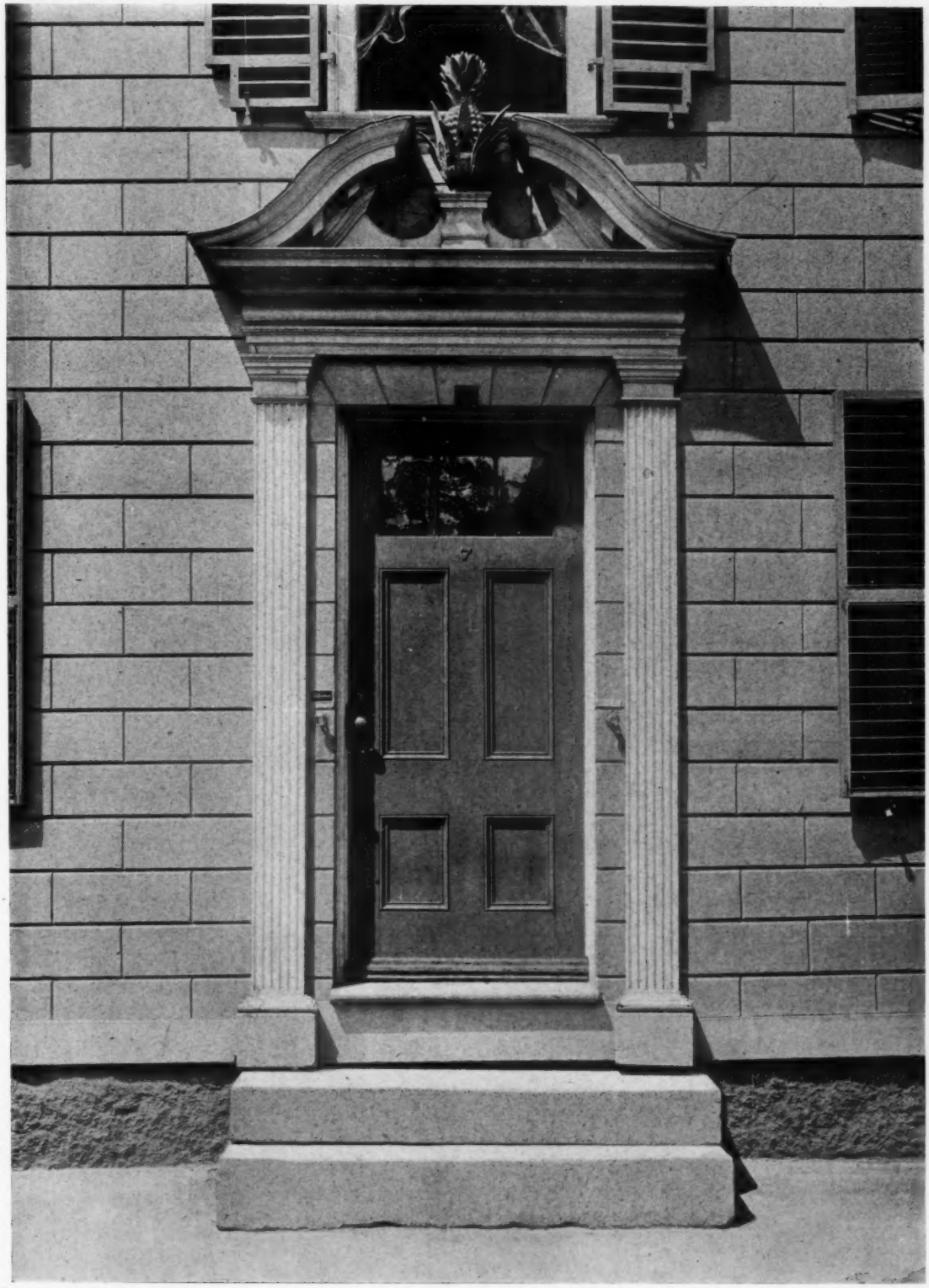
CLASS "A" & "B." ARCHAEOLOGY-II PROJET
A POMPEIAN COURTYARD
THIRD MEDAL—W. E. VIRRICK
Columbia University

STUDENT WORK,
BEAUX-ARTS INSTITUTE OR DESIGN

STEARNS HOUSE, ESSEX STREET, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*

BALDWIN-LYMAN HOUSE, WASHINGTON SQUARE, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*

XUM



PINEAPPLE DOOR
BROWN STREET, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*

XUM

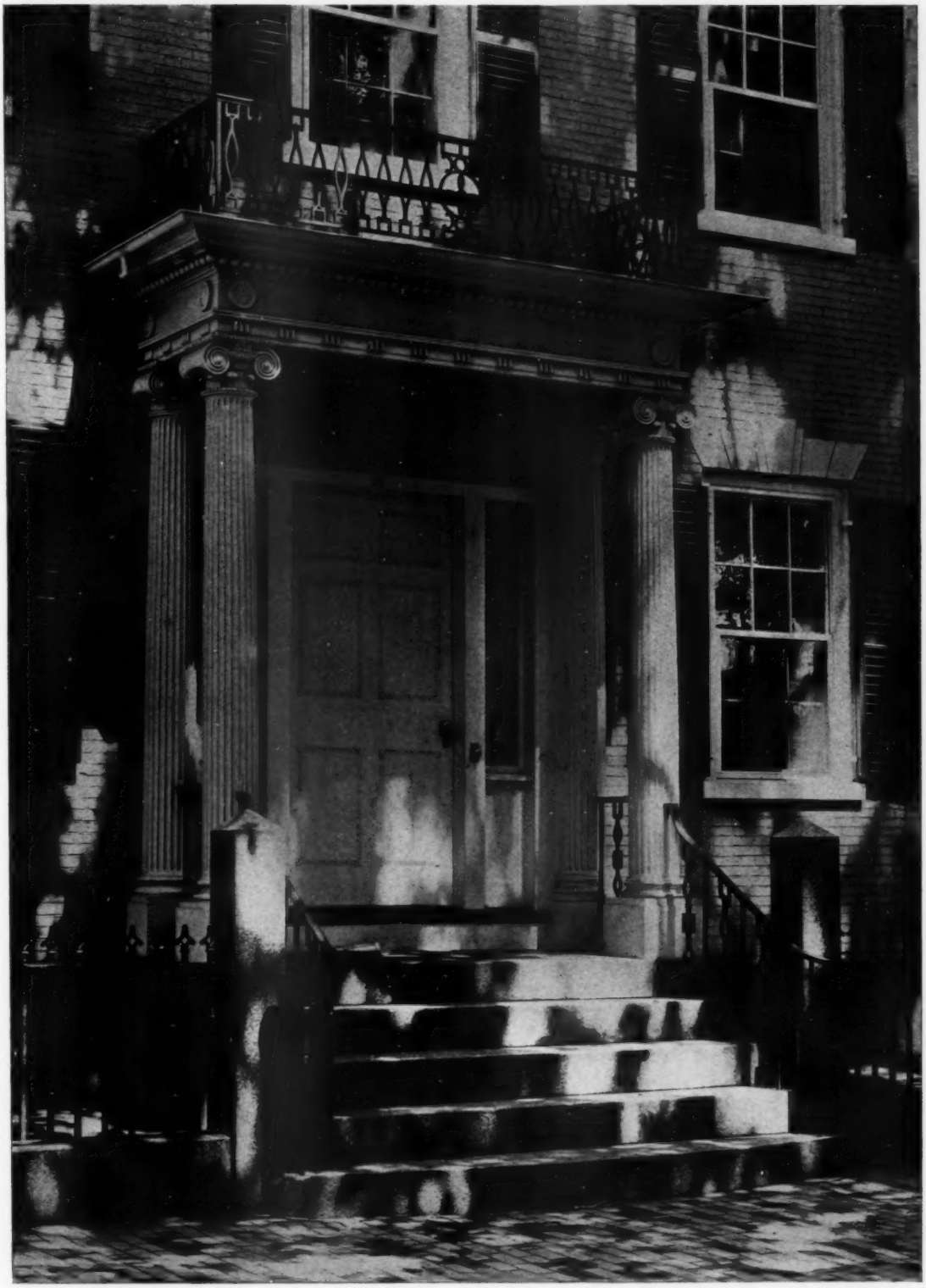
ENTRANCE DETAIL

FORRESTER-PEABODY-SALEM CLUB, SALEM, MASS.

SAMUEL McINTIRE, *ARCHITECT*

XUM

DOORWAY
CABOT-ENDICOTT-LOW HOUSE, ESSEX STREET, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*



ENTRANCE DETAIL
PEABODY-SILSBEE HOUSE, ESSEX STREET, SALEM, MASS.
SAMUEL McINTIRE, *ARCHITECT*
ERECTED 1797

XUM

wholesale alteration reduces the cost of each unit and permits the establishment of a community upon which its surroundings have but little effect.

With this idea in view, a group of people have bought, on two of the side streets of a large city and in the middle of the block, two rows of houses of ten each, facing back to back, with the purpose of remodelling them and laying out the yards into a garden that will be common to all.

The problem is the study of this garden, which will extend the full length of the houses, i. e., 200 feet—and will be 100 feet wide between their rear walls. Individual gardens for each house should be developed within the scheme, care being taken, however, that they are not so emphasized as to destroy the general effect of the garden as a whole. Fountain, pools, loggias or any form of garden decoration may be used, and by some means the view of the neighboring houses on either side should be masked or screened. The houses in the group are three and four stories.

NUMBER OF DRAWINGS SUBMITTED: 38.

AWARDS:

First Mention: F. D. V. Martinelli, Atelier Corbett-Gugler, New York City; J. Weston and E. Weston, Los Angeles A. C., Los Angeles; A. L. Muller, Atelier Wynkoop, New York City.

Mention: C. J. Pellegrini, C. B. Marks and R. E. Dake, Carnegie Institute of Technology, Pittsburgh; W. Conley and A. M. Taylor, Columbia University, New York City; G. M. Musick, Atelier Denver, Denver; G. Chittenden and G. Verge, Los Angeles A. C., Los Angeles; R. E. Dando, Atelier Parsons-Chicago A. C., Chicago.

PROGRAM

CLASS "A" AND "B" ARCHAEOLOGY—II PROJET

The Committee on Architecture proposes as subject of this Competition:

"A POMPEIAN COURT YARD"

In A. D. 79 the flourishing town of Pompeii, one of the pleasure resorts of the Roman aristocracy was overwhelmed by the great eruption of Vesuvius. Buried under a shower of ashes and small stones, which can easily be removed by the archaeologist, it has been preserved as a most perfect relic of antiquity. The weight of the overlying material has destroyed the roofs and second stories of the buildings but the walls of the lower stories are standing and the plans are clearly outlined. We can still walk through the streets with their stone pavement deeply rutted by the chariot wheel, and the numerous private houses still afford an insight into the ordinary life and habits of the population of an ancient town. These houses show a variety of individual taste and imagination, always restrained, however, by the customary arrangement of vestibule, atrium and peristyle. This latter was an open court surrounded by a colonnade, from which were the entrances to the private rooms of the dwelling. These courts were ornamented with pools, fountains, statues and vases grouped in shrubbery and flowers as a miniature garden.

The subject of this program is the design of such a court. The opening to the sky shall not exceed 30 x 40 feet, exclusive of the surrounding colonnade.

NUMBER OF DRAWINGS SUBMITTED: 16.

AWARDS:

Third Medal: W. E. Virrick, L. J. Valker and M. L. Colean, Columbia University, New York City.

Mention: R. V. Murison, R. E. Dake and J. G. Todd, Carnegie Institute of Technology, Pittsburgh; R. L. Minkus, Chicago School of Architecture, Chicago; L. H. Schofield and G. S. Johnston, J. Huntington, Polytechnic Institute, Cleveland; W. B. Mylchrest, Syracuse University, Syracuse; R. Gleeson, University of Pennsylvania, Philadelphia; Essie Lipscomb and R. L. White, University of Texas, Austin.

The Southern Intercollegiate Competitions

THE increase in the facilities for architectural education is not generally known. With the rapid development of the country and increased wealth and resources, there must be an increased demand for architectural service. This demand is also made more insistent by the intricate and complex problems that are brought about by the important changes made in the methods of building construction. It is well that the sources of architectural training be distributed throughout the country for on that is based the hope and expectation of there being developed a truly representative American type of architecture.

The annual Southern Intercollegiate Competitions are contested by a group of southern architectural schools which are departments of the Alabama Polytechnic Institute, Tulane University, Agricultural and Mechanical College of Texas, Rice Institute of Texas, the Agricultural and Mechanical College of North Carolina (generally known as Clemson College) and The Georgia School of Technology. At least four of the six schools have entered into each annual competition. The entries have been limited to four or five designs from each school. The competitors are limited to members of the senior class and the problems are of six weeks' duration. The programs have been written and problems judged by the architectural faculties of the University of Pennsylvania, Massachusetts Institute of Technology, Cornell University, Columbia University and the Carnegie Institute of Technology.

These competitions have had a very fine effect on the spirit and mark of the students and have always brought out the best efforts of the men. After the awards are made the drawings are exhibited at the competing schools. The Georgia School of Technology seems to win with great regularity, which should be very pleasing to Mr. Francis P. Smith, Professor of Architecture.

The first prize designs for the years 1917-1920 are here illustrated and indicate the character of the work accomplished at these schools. They compare very favorably with the work done at schools located in other sections of the country.

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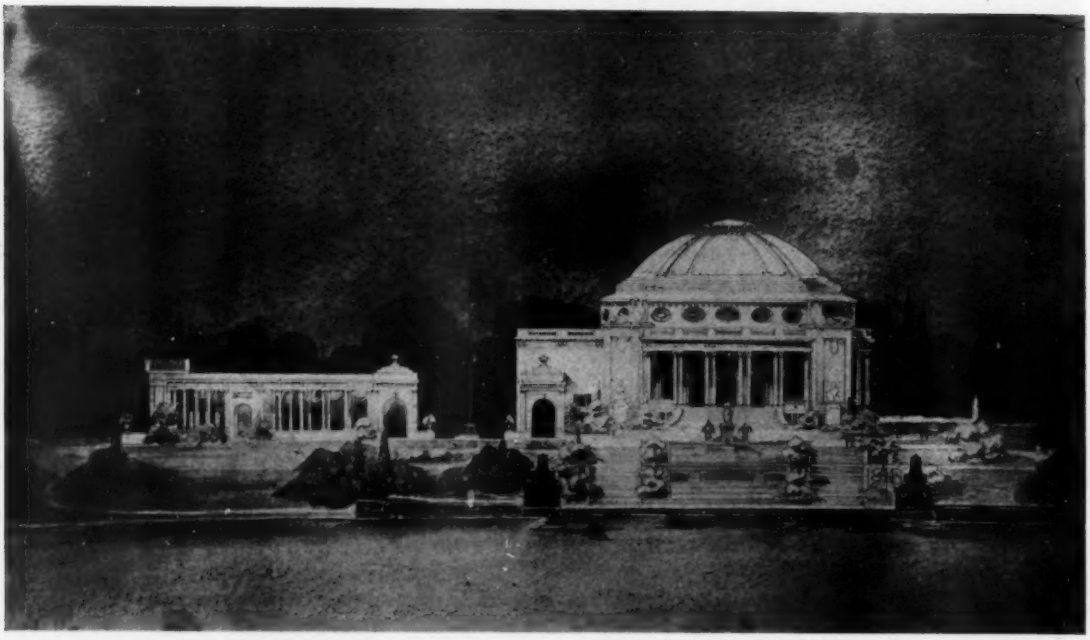

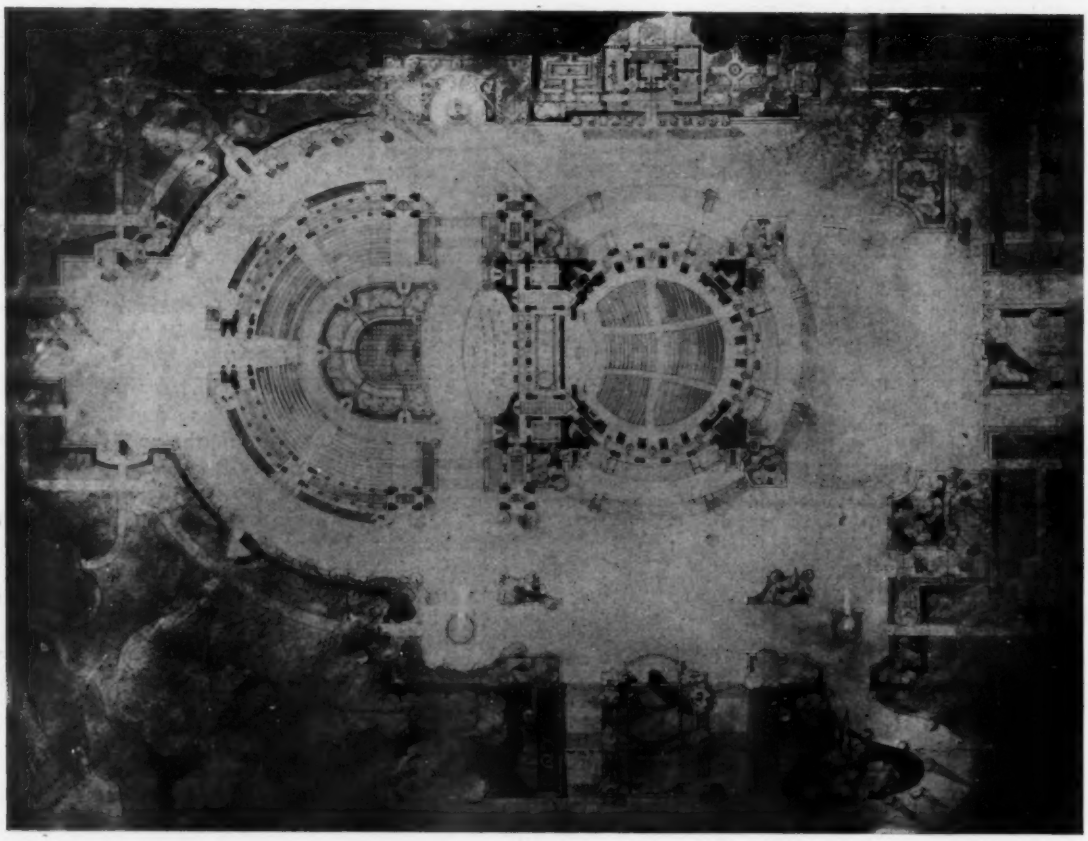

W. C. HOLLEYMAN — FIRST PRIZE — GEORGIA SCHOOL OF TECHNOLOGY

A NATIONAL FORUM OF MUSIC

SOUTHERN INTERCOLLEGIATE ARCHITECTURAL COMPETITION

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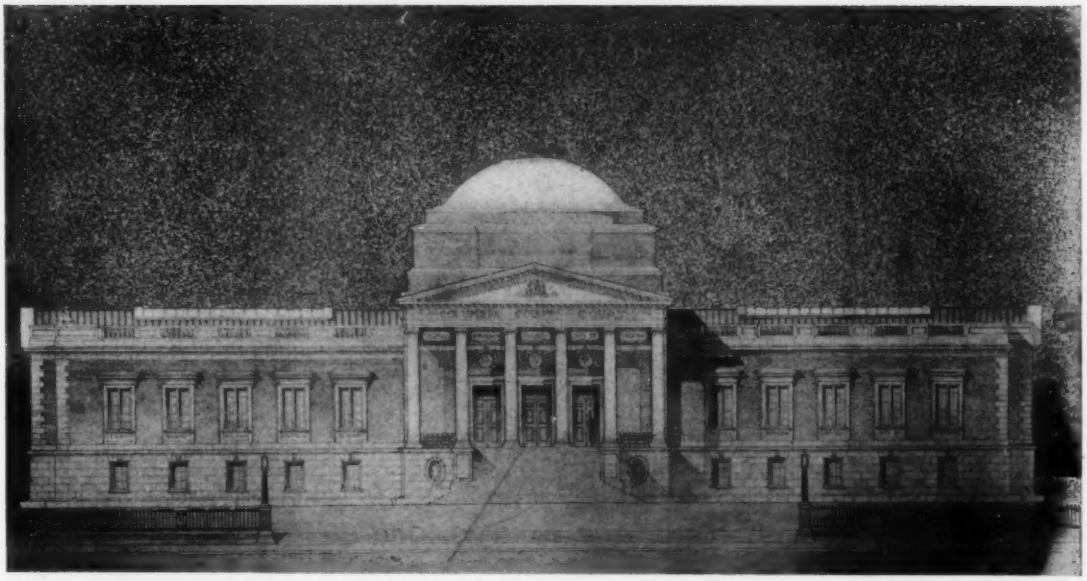
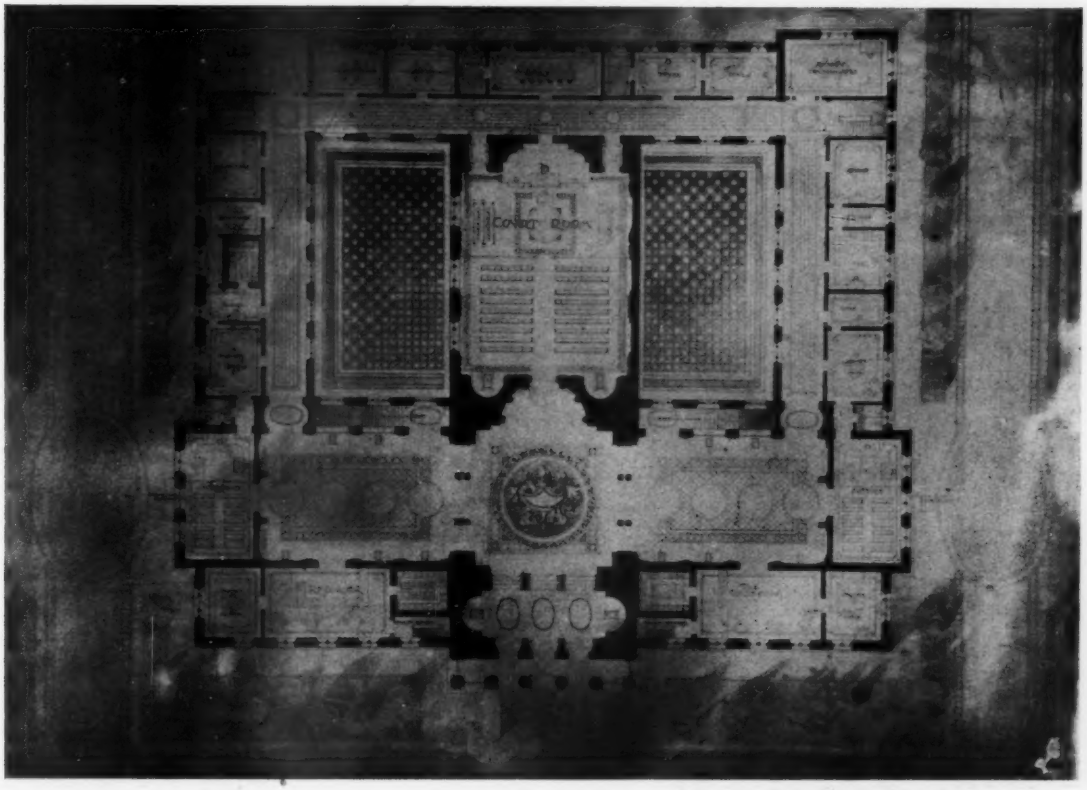
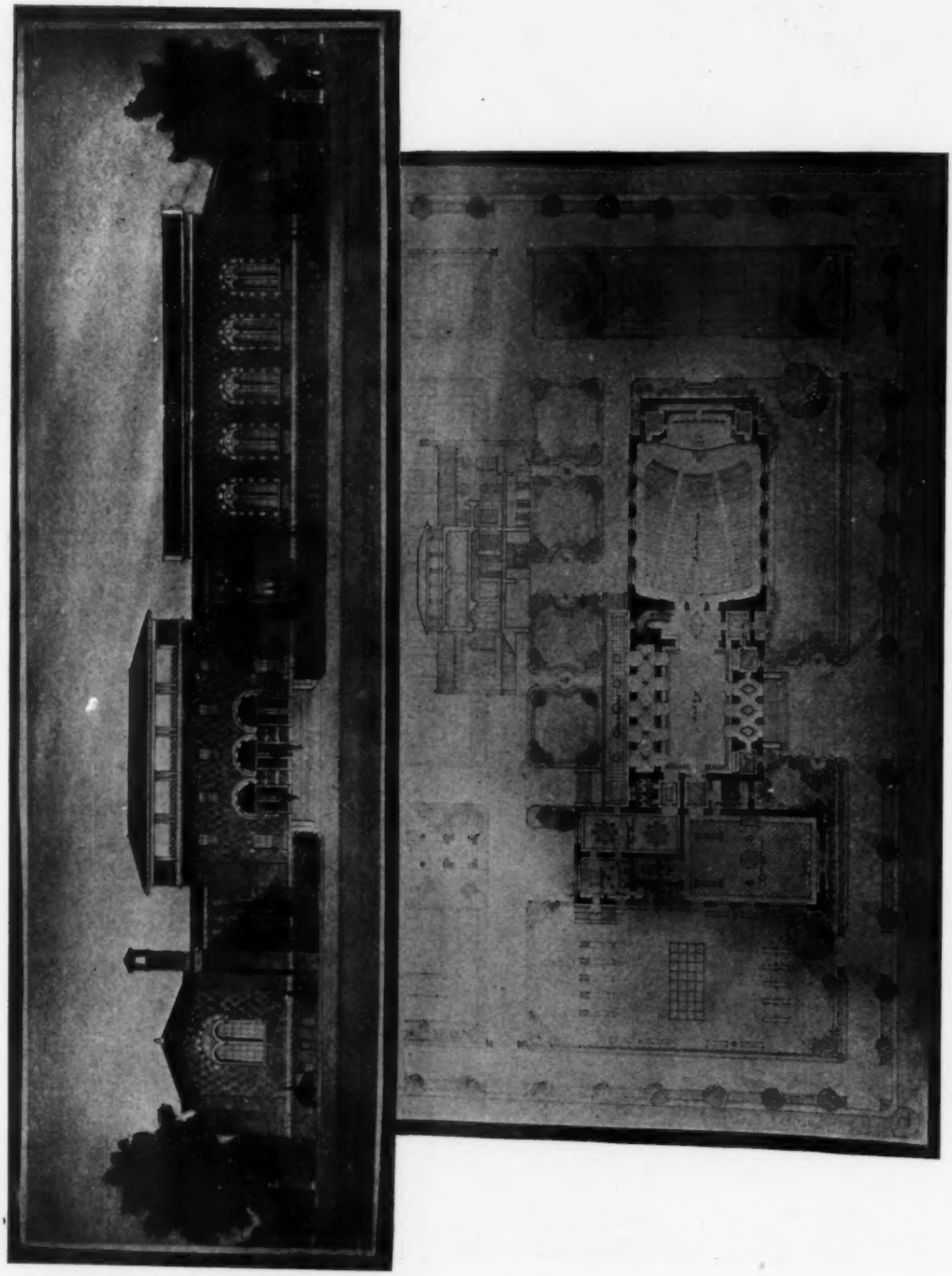




H. I. HIRSCH — FIRST PRIZE — GEORGIA SCHOOL OF TECHNOLOGY

A COUNTY COURT HOUSE

SOUTHERN INTERCOLLEGIATE ARCHITECTURAL COMPETITION

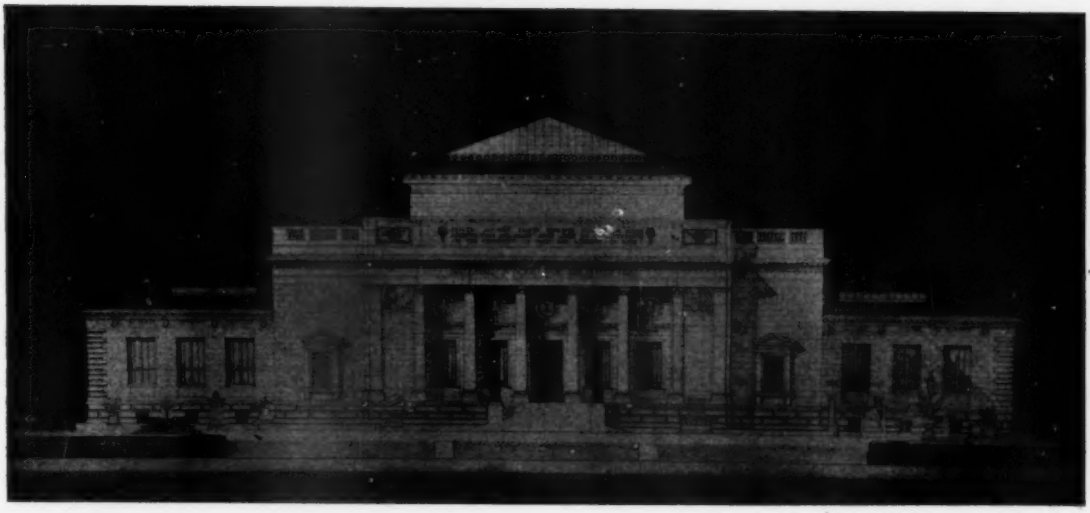


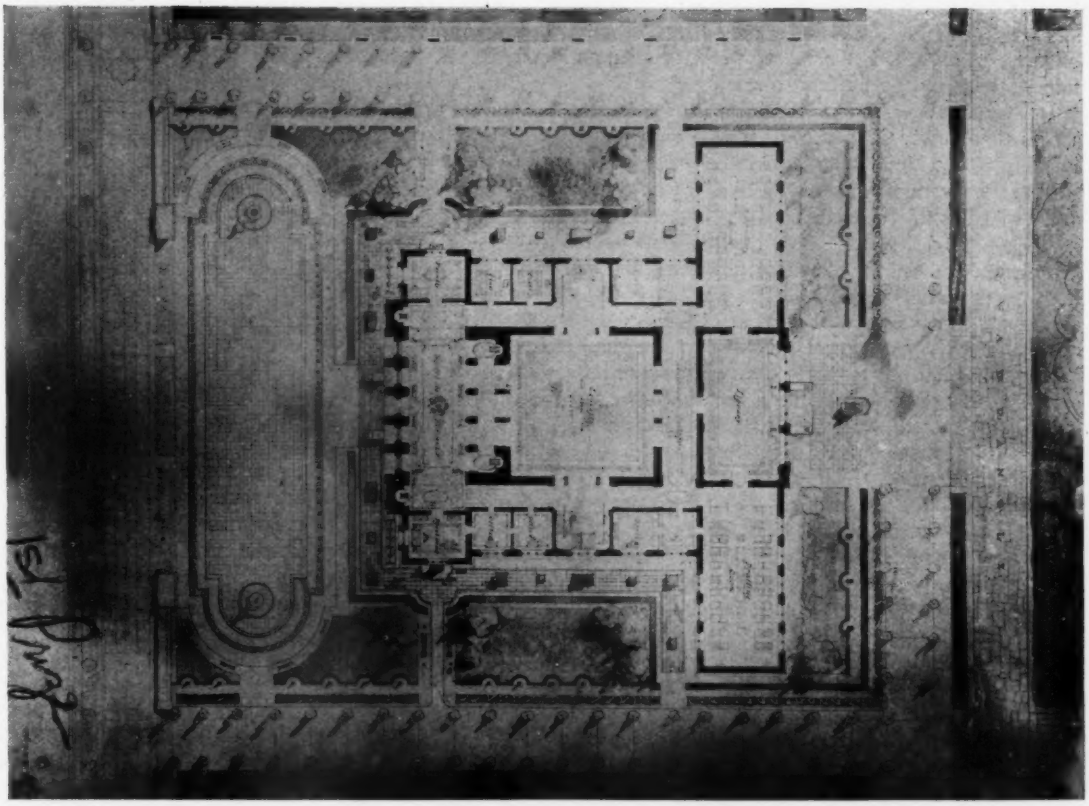
SOUTHERN INTERCOLLEGIATE ARCHITECTURAL COMPETITION

FIRST PRIZE

A COMMUNITY RECREATION CENTER

G. W. RAMEY GEORGIA SCHOOL OF TECHNOLOGY





E. W. BEACHEM — FIRST PRIZE — GEORGIA SCHOOL OF TECHNOLOGY

A NATIONAL FORUM OF MUSIC

SOUTHERN INTERCOLLEGIATE ARCHITECTURAL COMPETITION

Refrigeration—Part I.

By CHARLES L. HUBBARD

THE extensive use of refrigeration in a great variety of industries makes it a matter of especial interest to architects. While the design and installation of refrigerating equipment for large cold storage warehouses, packing plants, etc., are usually carried out under the direction of an expert, the so-called "portable" plant is commonly taken care of by the architect himself.

Recent data covering a period of two or three years shows that nearly 80 per cent. of the refrigerating installations made during that time have been of small size, averaging about 10 tons' capacity each, and applied to miscellaneous purposes, such as apartment houses, bakeries, clubs, confectioner's shops, creameries and dairies, department stores, fish markets, grocery and general stores, hospitals, hotels, ice cream manufactories, meat markets, office buildings, railroad stations, restaurants, schools and residences. More than 150 different uses for refrigeration have been enumerated, which should give it much the same importance as heating, ventilating, lighting and plumbing in connection with certain classes of building construction. Complete machines are built in all sizes, ranging from those adapted to private residences up to units suitable for the largest hotels. Most of the smaller outfits are mounted, complete, upon a single base, ready for connection with the refrigerator. In case of the larger sizes the condensing and cooling pipes are frequently hung upon an adjacent wall or supported upon separate foundations. The general equipment for all capacities is comparatively simple, and varies only in size, so far as the essential parts are concerned. Details, of course, become more complicated with increase in size.

PRINCIPLES OF REFRIGERATION

The cooling effect of any system of refrigeration depends upon the latent heat of vaporization of the refrigerant or medium employed. When a pound of water is vaporized or changed into steam at atmospheric pressure, 970 thermal units (T.U.) are withdrawn from the surrounding medium, which may be either air or water, depending upon existing conditions. As this action must take place at a temperature of 212 degrees, water is evidently not adapted to purposes of refrigeration, although it is made use of in one type of machine, under special conditions, as described later.

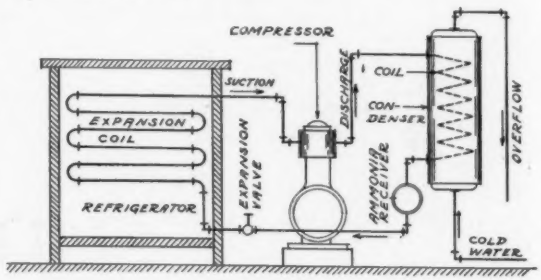


FIG. 1

Anhydrous ammonia, however, boils at a temperature of 29 degrees below zero, under atmospheric pressure, and absorbs 589 T.U. for each pound of liquid evaporated. This medium is more widely used than any other for general refrigerating work, although there are other volatile liquids which have similar properties. The principal objection to the use of ammonia for this purpose is the intensely irritating character of the gas, making a leak in an enclosed space extremely difficult, and in some cases, dangerous to deal with. Conditions of this kind are especially common on shipboard, where the space available for refrigerating machinery is usually cramped and poorly ventilated, and this has resulted

in the substitution of other refrigerating mediums for marine work, of which carbonic anhydride, or carbonic acid, is the most widely used. A machine employing a salt solution has been used to a considerable extent on naval vessels, and certain forms of this are especially adapted to air cooling, and drinking water outfits, where low temperatures are not necessary. Developments involving the use of dense or liquid air have been under way for some time, and machines of this type were installed upon a few naval vessels during the war, but at the present time the expense of this equipment is too great for general refrigerating purposes. Ammonia machines are almost universally installed for ordinary private and commercial work, where there is ample ventilation in case of escaping gas.

Systems of Refrigeration

The systems of refrigeration in most common use are the "compression" and "absorption" systems, together with certain modifications and combinations of the same. Points to be considered in the selection of a system will best be understood after a brief description of these.

Compression System

The essential parts of this system are shown in Fig. 1, and consist of a power-driven *compressor*, a

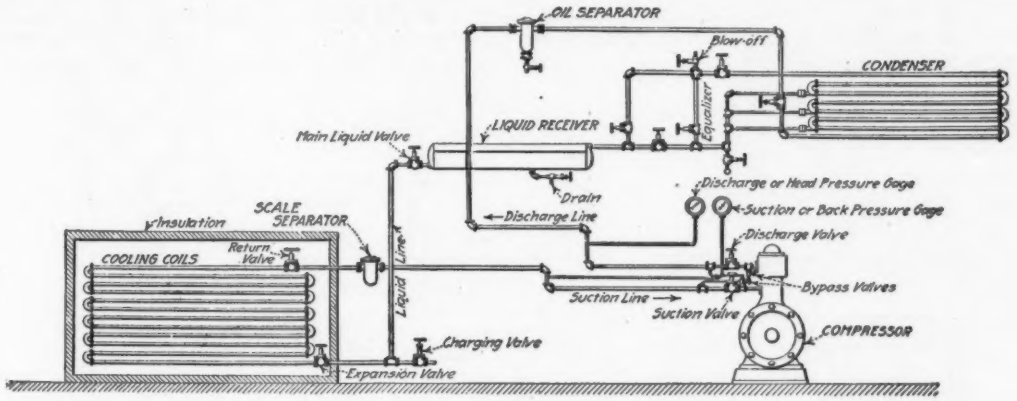


FIG. 2

submerged coil or *condenser*, an ammonia *receiver*, an *expansion valve*, and an *expansion coil* in the refrigerator or space to be cooled. For purposes of illustration let us start with liquid ammonia in the receiver under a high pressure. By opening the expansion valve slightly, a small amount of this liquid passes into the expansion coil, where it soon vaporizes, due to the lower existing pressure, and during this process extracts the necessary latent heat of

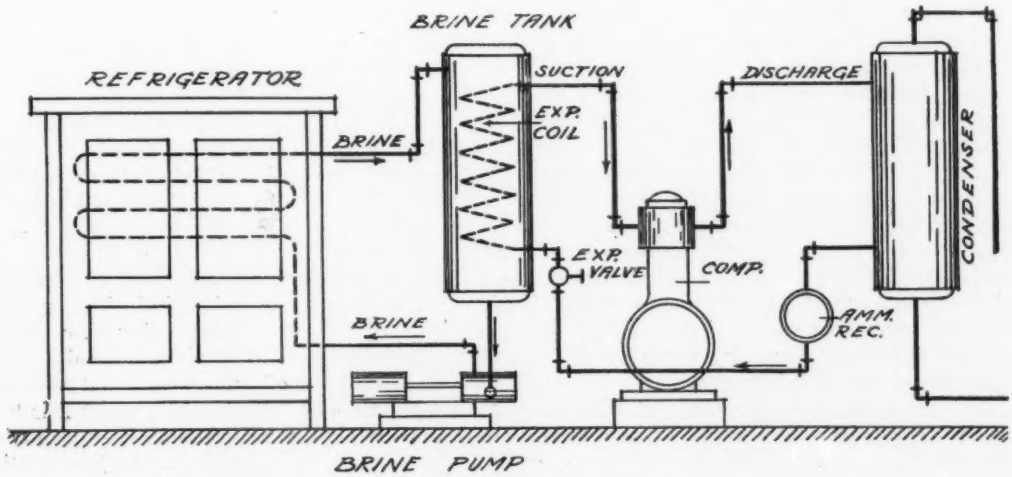


FIG. 3

vaporization from the air surrounding the coil, thus lowering its temperature.

The compressor, being in operation, draws the low-pressure gas from the expansion coil into the cylinder, where it is compressed to a high pressure and delivered as a gas to the condensing coil, which, being submerged in cold running water, absorbs the latent heat and again reduces the gas to a liquid, which flows into the receiver and thus completes the cycle. The pressure carried in the condensing and expansion coils (high-pressure and low-pressure sides of the machine) will vary somewhat, depending upon the size of plant and operating conditions, and the most part, are clearly indicated by notes on the drawing, but attention should be called to the form of condenser, which is radically different from that shown in Fig. 1. Instead of submerging the expansion coil in a tank of water, a double tube is used, with water flowing through the inner one. This will be described in detail later.

In the arrangements thus far shown, the coil in which the vaporization of the ammonia takes place is located in the refrigerator, or space to be cooled, so that the latent heat is drawn directly from the surrounding air. Plants designed in this manner operate on what is known as the *direct* system. In

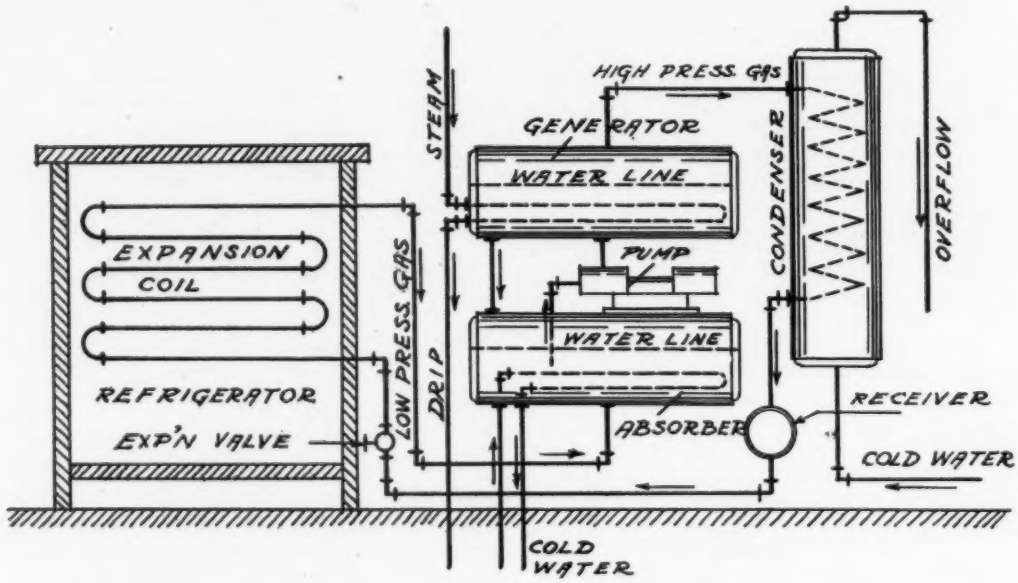


FIG. 4

may be taken as 125 to 250 and 15 to 30 pounds per square inch, respectively. The statement is sometimes made that under average conditions, with condensing water purchased at city rates, the most economical results will be secured with a suction pressure of about 25 pounds and a condenser pressure of 150 pounds. These, however, are matters of detail which are usually settled by the builders.

While the working range, with ammonia as a medium, may be taken as 15 to 250 pounds, carbonic anhydride requires much higher pressures on both the high and low pressure sides of the machine, and for average conditions a working range of 300 to 1,200 pounds per square inch may be taken. In some cases, as in marine work, pressures considerably higher are often employed. Fig. 2 shows a compression plant in more practical form, and introduces certain details not included in Fig. 1. These, for the *brine* system, shown in Fig. 3, the expansion coil is placed in a tank of brine, and the latter, after being cooled to a low temperature, is pumped through a secondary coil in the refrigerator. This arrangement has its advantages under certain conditions and is used in connection with both the compression and absorption systems.

Absorption System

The principle upon which this system operates is illustrated in Fig. 4, and is identical with that shown in Fig. 1, except the compressor has been replaced by an *absorber*, a small *ammonia pump*, and a *generator*. In operation the low-pressure gas passes from the expansion coil to the absorber, where it is taken up by water cooled by a coil of pipe through which cold water, from an outside source, flows continuously. This solution of ammonia, which is formed

in the absorber, is called "strong liquor," and is pumped into the generator above, as indicated.

The generator contains a steam coil, which heats the liquor and drives off the ammonia gas under a high pressure to the condenser in the same manner as it is discharged by the compressor in a compression system. From here on the process is identical with that shown in Fig. 1 until the low-pressure gas again passes into the absorber. After the ammonia has been driven off from the solution in the generator the residue is called "weak liquor," and being under a higher pressure than the absorber, flows back through a pipe connection shown at the left of the pump.

Absorption systems are constructed in a variety of forms, and the practical application of this principle makes use of various auxiliary equipment, certain parts of which are shown in Fig. 5. The generator in this case consists of three units or sections, mounted one above the other in order to save floor

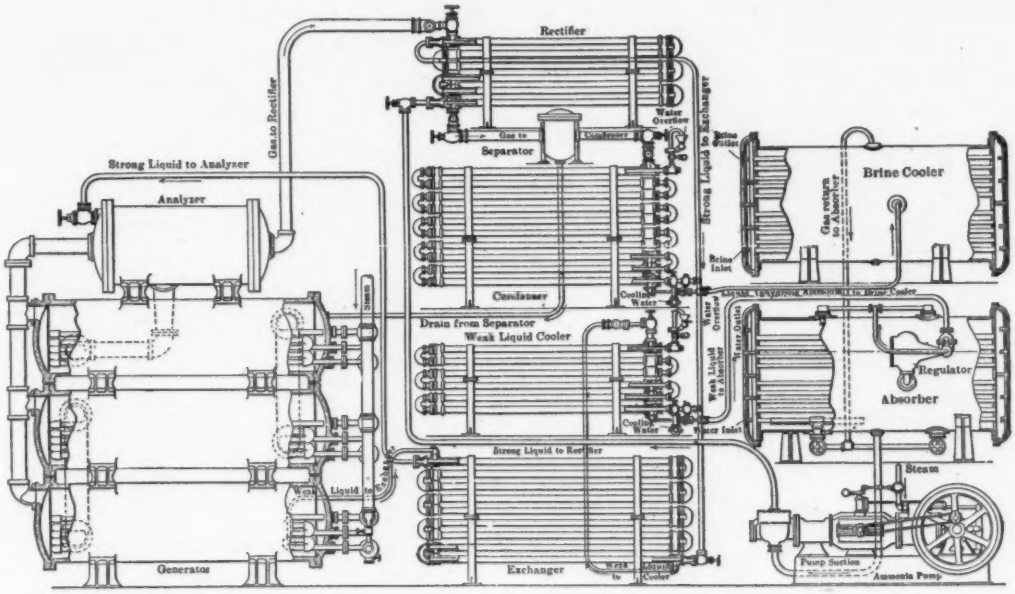


FIG. 5

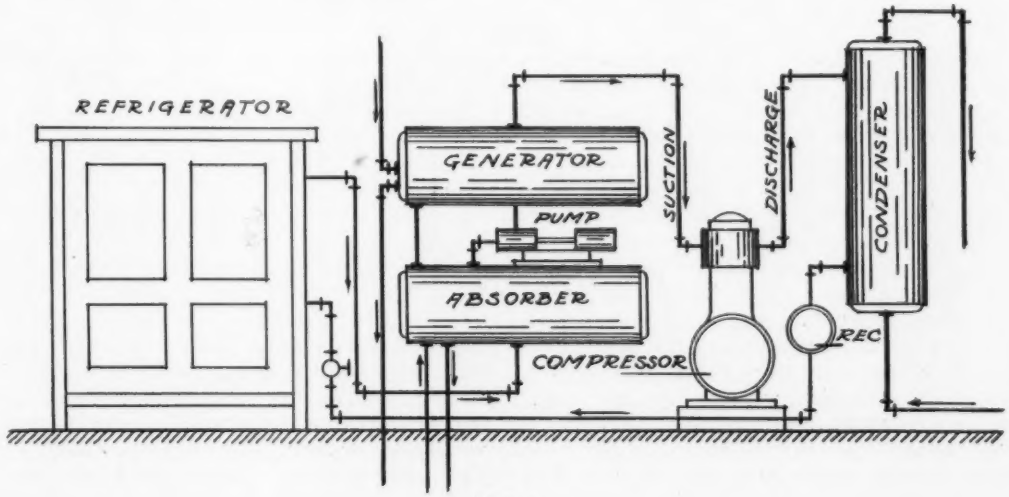


FIG. 6

space. The condenser is of the double-tube pattern, already mentioned.

The *rectifier, weak liquor cooler* and *exchanger* are similar in construction to the condenser, and their uses will be described later. The absorber and brine cooler are of the tubular form with outer shell, although the double-tube construction is often used for these in certain cases.

COMBINED COMPRESSION AND ABSORPTION SYSTEMS

The arrangement for this combination is shown in Fig. 6, and should be studied in connection with Figs. 1 and 4. It consists simply in introducing a compressor in the line between the generator and condenser, as indicated. Low-pressure gas from the expansion coil in the refrigerator enters the absorber, mixes with the cool weak liquor, forming strong

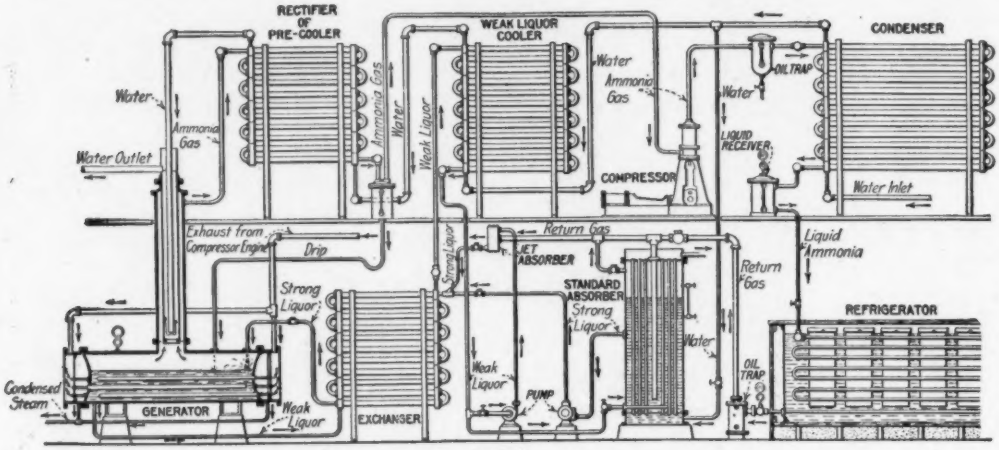


FIG. 7

Referring to Fig. 5, let us first trace the ammonia in both its gaseous and liquid form through the system, and then take up the use of the auxiliary equipment not shown in Fig. 4. Low-pressure gas from the expansion coil in the brine cooler flows into the absorber, as indicated, and mixes with the water, forming "strong liquor" which is at a fairly low temperature due to the circulation of cold water through the tubes. This is pumped in turn through the rectifier and exchanger to the generator by way of the analyzer. The gas liberated by the heat in the generator passes out through the analyzer to the rectifier, where any moisture which it contains is condensed by contact with the inner pipes through which the cool strong liquor is flowing. From here the dry gas passes into the condenser, where it is liquified, and then admitted to the expansion coil in the brine cooler in the usual manner thus completing the cycle. The action of the rectifier has already been described. The exchanger brings the cold strong liquor and the hot weak liquor into contact, thus warming the former before it enters the generator and cooling the latter on its way to the absorber, conditions necessary to the efficient operation of the machine. The weak liquor is still further cooled before entering the absorber by passing it through the cooler located just above the exchanger, where it comes in contact with the cold water flowing through the outer pipes of the coil.

liquor, and is then pumped into the generator, where it is heated by a steam coil. The gas thus liberated is drawn into the compressor and discharged into the condenser under a high pressure. Condensation and

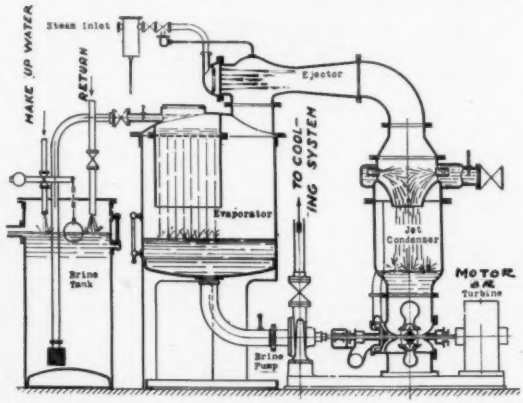


FIG. 8

the admission of liquor ammonia to the expansion coil are the same as in the compression and absorption systems already described. A practical application of the combination system is shown in Fig. 7, which may be examined in connection with Fig. 5. The principal change in this system, as compared with Fig. 5, is the introduction of a jet absorber in

addition to the standard tubular type. The former does the main part of the work, while any gas not absorbed passes automatically into the latter, where it is taken care of and the liquor pumped into the generator, as indicated.

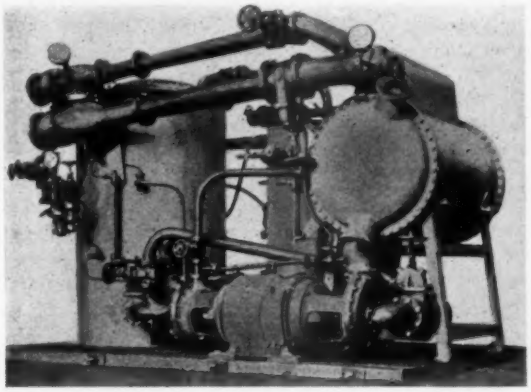


FIG. 9

Other Systems of Refrigeration

The machine illustrated in Fig. 8 makes use of water as the working medium instead of ammonia or carbonic acid. For temperatures above 35 deg., as in air conditioning and the cooling of drinking water, water alone is used as the refrigerant, while for lower temperatures it is necessary to employ brine to prevent freezing. It has already been noted that water exposed to atmospheric pressure (14.7 pounds per square inch, absolute) will vaporize at a temperature of 212 deg. If the pressure is reduced to 0.147 pounds, vaporization will take place at 45 deg., and with 0.087 pounds, at 32 deg., and so on. As latent heat must be supplied to change water into vapor, it is evident that if this cannot be obtained from any other source it will be drawn from the water itself, thus lowering its temperature. Hence, in order to produce any given low temperature of water in an insulated vessel it is only necessary to maintain an absolute pressure corresponding to the vapor tension of the water at the desired temperature (0.087 pounds per square inch for 32 deg.) and remove the vapor as fast as formed.

This is the principle of the machine illustrated in Fig. 8, in which a high vacuum is maintained in the *evaporator* by means of a steam *ejector* supplemented by a jet *condenser*. The entering water or brine from the brine tank is broken into a fine spray which accelerates evaporation, and the vapor thus formed, and any inleaking air, are removed by the ejector and discharged into the condenser, which is equipped with the usual air and circulating pumps. The cold water or brine which collects in the bottom of the evaporator is pumped through coils in the space or liquid to be cooled, the same as in other systems, and returned to the brine tank.

The machine illustrated in Fig. 8 is for temperatures above the freezing point. For cold storage and ice making the temperature of the brine needs to be considerably lower and a second ejector is added to reduce the pressure in the evaporator to a lower point; otherwise the construction is practically the same. Fig. 9 shows a machine of this type equipped with a surface condenser.

The outfit illustrated in Fig. 10, while operating on the compression principle, is so radically different in design from the ordinary type of machine that it is included under the present heading. This device consists of a revolving shaft carrying two drums, one of which contains a compressor while the other corresponds to an expansion coil. Before leaving the shop the air is exhausted from the first of these, and it is charged with the refrigerant, sulphur dioxide being used in this case; a pure neutral lubricating oil is then added, after which it is hermetically sealed. In operation the drum carrying the compressor revolves in a tank of flowing water, which acts as a condenser, while the drum in which expansion takes place is partially submerged in a brine tank. The small pump for circulating the cold brine through the coils in the refrigerator is shown at the extreme left in the cut. This machine is

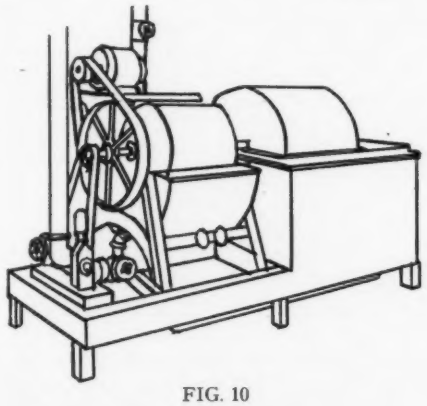


FIG. 10

made in capacities ranging from about 380 to 3,800 pounds of refrigeration in twenty-four hours under continuous operation. The "dense air" system has already been mentioned, and in its present state of development will not be further described.

(To be continued)

XUM

Single Doors for Entrances to School Buildings

A subscriber writes to us as follows:

I have noted with interest an article which appeared in THE AMERICAN ARCHITECT September 22, 1920, advocating the use of a battery of single doors for entrances to school buildings. The arrangement seems to me to embody about the maximum of usefulness when doors are likely to be in constant action, and is a treatment about which I have been enthusiastic for a long time.

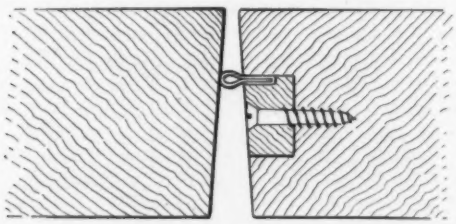
It might be added, however, as in the entrance illustrated, where there are five doors, that where the greatest need is for egress, convenience would be further facilitated by omitting the handle, knob or pull from the doors at the extreme right and left, causing entrance to be made through three of the doors only and egress through all five. If this plan were adopted, and it were found to curtail entrance capacity too greatly, one or both of the end doors could be re-treated to afford entrance.

W. C. STEPHENS.

Chicago, Ill.

An Ingenious Method of Securing Weather-Tight Contact Between Swinging Doors

An original method used by a New England architect for securing weather-tight contact between two doors which swing in opposite directions has been brought to our attention by a correspondent.



It will be seen from the accompanying drawing that a channel is routed in the edge of one of the doors. This channel, it is suggested, should be ¾ in. wide to suit the ordinary routing plane. Fitted into this channel is a wooden strip, along one edge of which has been attached a piece of felt weather strip of the type shown. The strip can then be screwed to the edge of the door, and if at any time the weather strip becomes worn or torn a new piece may be easily fitted.

It has been found by experience that felt is much better than the rubber strip for this purpose and that it lasts longer and does not break through constant use. Also, experience has demonstrated that the type shown with an "O" loop is better than the straight weather strip or piece of felt.

Our correspondent writes that for the last 20 years, he has seen doors trimmed in this way, and that the doors first equipped are doing as good service as at the day when they were put up.

Advantages of Bituminous Concrete Foundation

Bituminous concrete foundations for various types of pavements have proved so successful for a long period of time that considerable discussion has been given to their use at recent road building and engineering society conventions. It is interesting to note the summary of advantages of bituminous concrete foundations as given by Hugh W. Skidmore of the Chicago Paving Laboratory in a paper read before the Illinois Society of Engineers.

Mr. Skidmore summarizes the advantages of bituminous concrete foundations briefly as follows:

"(1) Provides homogeneity of mass and positive bond between foundation and wearing surface when bituminous top course are employed.

"(2) Provides uniform contact with the subgrade, thus insuring the benefit structurally of all of the beam strength possessed by the foundation slab and by the same token, makes certain uniform distribution of load to the subgrade.

"(3) Because of the inherent flexibility of the material, the foundation slab will at no time be called upon to act as an arch over weak subgrade areas, therefore the possibility of the foundation rupturing, as is frequently the case with Portland cement-concrete, will be reduced to a minimum.

"(4) Provides freedom from cracks and upheavals.

"(5) Insures against the presence of moisture in the foundation structure, thus prolonging the life of the pavement.

"(6) May be easily repaired at minimum cost; the surface patch method being applicable except in the case of very serious defects.

"(7) Provides decided economies in construction as it disposes with the equipment and organization necessary to lay cement-concrete, thus affording the contractor the advantage of exclusive use of that portion of his ordinary equipment and labor organization which in actual operation has heretofore proven to be the most economical, and thereby profitable.

"(8) Does away with the long period of time required for curing of the foundation, thus permitting

the opening of completed work to traffic immediately and providing a rapidity of turnover to the contractor not possible in the case of rigid foundations.

"(9) Permits the use of the same materials, except cement, as are employed in cement-concrete work.

"(10) Under similar conditions, using the same aggregate materials bituminous concrete of equal thickness will be found to be cheaper than cement-concrete at present prices."

Personnel Research Federation Is Organized

Under the auspices of the National Research Council and Engineering Foundation, in the building of the National Research Council, Washington, was effected March 15 the organization of the personnel research federation. This federation includes in its membership scientific, engineering, labor, management and educational bodies. The federation has been organized to bring about interchange of research information among the numerous organizations that are engaged in personnel research.

It is reported to the new federation by the bureau of labor statistics, of the Department of Labor, that there are 250 such organizations in the United States. The federation will collect research information, will encourage research through individuals and organizations and will co-ordinate research activities.

Temporary officers were elected as follows: Chairman, Robert M. Yerkes, National Research Council; vice-chairman, Samuel Gompers, American Federation of Labor; treasurer, Robert W. Bruere, Bureau of Industrial Research; secretary, Alfred D. Flinn, Engineering Foundation; acting director, Beardsley Ruml, assistant to the president of the Carnegie Corporation of New York.

The aims of the new organization are increased efficiency of all the personnel elements of industry—employer, manager, worker—and improved safety, health, comfort and relationships.

Pittsburgh Changes Regulation on Wall Thickness

The new building code formulated by a special committee of the Pittsburgh Chamber of Commerce permits walls of a minimum thickness of 8 inches instead of 13 inches, provided the length of the house does not exceed 24 feet to the square or 35 feet to the gable point. Terra cotta block may be used in the construction. Permission is granted to omit cellar construction, provided 18 inches of air space are allowed under the first floor. The new code was drafted with the aim of making it easier for home builders.

New Administrative Engineering Course at Union College

Union College, Schenectady, N. Y., has added a new course in administrative engineering designed for training managers and superintendents of industrial plants. The course covers a period of four years, in which science comprises 26 per cent. of the total time; engineering, 39 per cent.; business administration, 10 per cent., and cultural studies, 25 per cent. The course includes studies in accounting, finance, banking, business law, contracts, and industrial management. It is designed for students more likely to be interested in manufacturing industries dependent upon engineering as a basis.

XUM

Current News

Happenings and Comments in the Field of Architecture and the Allied Arts

Where Land Costs Most

Wall street at Nassau street, and Fifth avenue at Forty-second street are rivals for the title of the highest-priced property in the world.

Roosevelt Memorial Site

Monument to Be Located in Front of Field Museum in Chicago

Plans for a Roosevelt monument in front of the new Field Museum, at the foot of Roosevelt road, were announced by the Roosevelt Memorial Association of Greater Chicago in its annual report. The site has been agreed upon by members of the association and the south park commission as the most suitable available. Cyrus Thomas, architect, has been engaged by the commission to prepare the plans.

Meanwhile, the association is preparing to push plans for the extension of Roosevelt road from Wheaton to St. Louis, as planned in the original project.

Tower Made of Tree Trunk

Visitors Will Marvel at Adornment Set Up on Grounds of the National Capital

Part of the trunk of a California redwood tree, 30 feet in diameter at the base, has been shipped to Washington and converted into a tower on the grounds of the Department of Agriculture. It is provided with a door and an interior stairway and is surmounted by a circular roof with dormer windows looking in four directions. The trunk is so heavy that it had to be cut into several sections for shipping.

Chinese Art

The applicability of Chinese art for interior decoration of any period is being strikingly illustrated in a recent gallery opening in New York. The idea that anything Chinese is gaudy is being gradually displaced. In the carving of gems, the working of metal and in tapestry designs the Chinese are without rivals. The owner of the new gallery has fitted up half a score of rooms in period designs—there is the old French and English, the American colonial, the early Italian and the Holland rooms. Fitting snugly into the general tone of the room are marvels of Chinese craftsmanship in the form of hangings, carved woodwork, tapestry and lamps. It is a revelation to many and gives a new conception of Chinese craftsmanship.

Moving a City

The gigantic task of moving an entire city is slowly nearing completion in Minnesota. The city of Hibbing, 20,000 population, with substantial brick buildings and a street car line, is being moved to a new site to permit the mining of rich deposits of iron ore upon which it stood.

Georgia School of Technology

A copy of the Review for 1920, the annual publication of the Department of Architecture of the Georgia School of Technology, has been received.

The present issue consists of a number of plates which are reproductions of pen etchings and other designs and problems that have been worked out during the school year. This well conducted architectural school is contributing in a most dignified manner to the advancement of architectural education. The work illustrated is all of a nature to bring credit to the institution.

Peace Gardens for War Gardens

The war garden may be no longer necessary but the impetus given during war times to the raising of vegetables had other uses besides emergency service and it would greatly be regretted if the love of working the soil, which was thus aroused, were allowed to weaken and die out with the passing need. The practical knowledge and skill acquired by those who turned ugly back yards and vacant lots into fertile food supplies, even on a small scale, are too valuable to be suffered to lie idle and rust with disuse.

The architect can do a good service by encouraging the replanting and maintenance of these attractive additions to homes and backyards. The public should let the war garden continue to develop into the peace garden, where the love of beauty is stronger than the desire for utility, and let the flower garden supersede or at least accompany the vegetable plot.

XUM

Australian Artificial Veneers

A recent Australian invention of an artificial composition similar to veneer should be of interest to manufacturers in proximity to large supplies of waste material of vegetable origin, such as sawdust. As patent applications are pending in Australia and other countries, the inventor is at present reticent in furnishing details other than that the substance is worked up entirely from waste fibrous products and other vegetable matter, and that sawdust can be utilized in considerable quantities in the manufacture of the cheaper grades of the composition. The Canadian trade commissioner at Melbourne describes the product in the following terms:

The substance—named "Keltona"—can be used for a variety of purposes, such as chair backs and seats, furniture generally, veneers, and wall and other paneling, and can be produced to represent excellent marble effects. It is capable of being bent freely for a variety of commercial purposes, worked with tools, sawn, bored, planed, sandpapered, etc., and will take nails with ease.

A beginning has been made in manufacturing the composition in Melbourne.

Our Most Popular Building

Popular tastes in architecture vary from age to age. Greeks loved their columns, the Romans their arches. And the Americans their back yard garages!

It used to be said that the early colonial stood for American taste in building. Then the steel-framed skyscraper came and the Manhattan sky-line became a sort of national trade mark. Now comes the garage, lowly, useful, homely, ubiquitous shelter for the little old tin lizzie.

Permits for more than 4,000 private garages were issued in Cleveland in 1920. These were for the city proper; hundreds more would be added were the suburbs taken into consideration. More than 4,000 private garages and 1,824 dwellings, frame or brick. More than two garages to each dwelling.

Go back a year. In 1919 there were slightly more than 3,400 garage permits issued and 2,905 permits for dwellings, frame or brick. Taking 1919 and 1920 in comparison, garage permits increased more than 600, while dwelling permits decreased 1,081. In the same period there was a decided falling off in brick and frame apartments and tenements also, but garage building kept on its way.

These figures for Cleveland are not dissimilar to figures from other cities. Practically everywhere in America the unobtrusive little garage set in the corner of the back yard garden not only holds its own but gains on every competitor. Material and labor costs may slow down construction when it comes to homes and business blocks, but the garage rises superior to all such considerations. It mocks economics and thrives on hardship.

South America Offers Inducements to Immigrants

The Director of Immigration of Brazil has issued a report covering admissions and nationalities from 1908 to 1919, inclusive, a period of 12 years. The total number is 1,015,813 and the high mark was reached in 1913, with admissions of 192,683. The check on immigration during the war was marked, and recovery is shown in the year 1919. The Latin group, including Portugal, Spain, Italy and France, furnished 775,523, or 76.3 per cent. of the total, though Russians, Germans and Turco-Arabs were well represented.

With the release of shipping since the war, immigration to South America has shown greater activity and various governments are making liberal inducements to settlers. Farmers are especially desired and are given land and transportation from the port of entry to their destination. Brazil, Argentine, Chile and Peru are offering concessions to immigrants who will develop the country.

Realistic Art Is Urged

George Gray Barnard Favors Idea to Win Over the Masses

Take the 4,000 or 5,000 young men and women painters and sculptors who annually graduate from the splendid art schools in America—the majority of whom go under in the struggle of life—and put them in the mines, the mills, the big industrial plants, writes George Gray Barnard. Let them depict on canvas and in marble the man who labors, and who now sneers and jeers at art. Place those canvases on the grimy walls of the factory and the sculpture groups beside the door where the workers punch the time clock. Thus reconcile the masses to art and the artist to the masses.

That is the dream of George Gray Barnard, of New York, noted American sculptor. He outlined it at a dinner given by the Art Alliance, Philadelphia. The affair marked the opening of a campaign to double the membership of the alliance from 1,100 to 2,200 and the beginning of a movement to broaden the scope and increase the activities of the organization. More than 400 men and women attended. Among the speakers, aside from Mr. Barnard, were John F. Braun, recently elected president of the alliance; David Bispham, Miss Violet Oakley, Mrs.

Harold E. Yarnall, Mrs. Ripley Hitchcock, president of the Art Center of New York, and Thornton Oakley.

Pullmans Used As Houses

Fifty Rail Employes, Unable to Obtain Homes, Occupy Sleeping Cars

A striking demonstration of Pittsburgh's house famine is provided by the presence on a siding in the Allegheny station of the Pennsylvania Railroad of two sleeping cars, which are being used as rooming houses by about fifty employees of the railroad, who have been unable to find dwellings. The cars, which have been standing on the siding for more than a week, are costing the Pennsylvania Railroad the usual Pullman royalty, in addition to the heat, laundering of bedding and "chambermaid" service, the last being supplied by yard workmen, who could be employed more profitably in other ways.

Homes for laboring gangs in old cabooses and freight cars are not an uncommon sight on engineering and large construction jobs where there is no nearby town or settlement, but the housing of fifty men, employed in the higher grades of work, in berths for which travelers pay from $2.50 a night up is believed to be something new.

Personalities of Cities

Cities have personalities much as human beings do. They have a spirit of their own and carry their own atmosphere. So analyzing this, the *Minneapolis Journal* notices that there is a perceptible difference felt, if not defined, when one goes from Minneapolis to St. Paul or vice versa. This difference sometimes eludes definition, but is comprehended in the term, spirit of a city.

Professor Edward A. Ross, professor of sociology in the University of Wisconsin, in his book on the "Principles of Sociology," suggests that this difference between cities is not imaginary. It is real, and it is due in part to the differences in make-up of the population.

There are "he" towns, where men predominate, and "she" towns, where women predominate. Washington, Richmond, Cambridge and Nashville have from one hundred and thirteen to one hundred and sixteen women for every one hundred men. Textile cities like Lowell, Fall River and Paterson draw more women than men, while manufacturing cities like Bridgeport, Birmingham and Detroit, draw more men than women.

But there are contrasting statements. The professor suggests that we have no means of knowing what traits a female community would develop, but we do know that a male community has a character of its own, very pronounced in mining towns or border communities. A womanless town is in constant flux and migration. Women and homes give a community a stable character, and do much to soften the quest for gold. In a "he" town, respect for law is likely to be weak, and public opinion not very sensitive or assertive. Strenuosity is apt to characterize it, but respect for person and property limps.

Personals

William F. Wischmeyer and W. Oscar Mullygardt have become associates with the firm of Mauran, Russell & Crowell, 1620 Chemical Bldg., St. Louis, Mo. They are both architects.

Mr. Robert O. Derrick, architect, formerly with Murphy & Dana, architects, New York City, has been admitted, as a partner, to the firm of Brown & Preston, architects and engineers of Detroit.

The present offices will be retained at 406-407-408 Empire Bldg., Washington Boulevard at Clifford street, Detroit, Michigan.

Murray Klein, architect, has moved his office from 116 Grove street, Brooklyn, to 37 Graham avenue.

Joseph A. McCarroll, architect, formerly at 32 Clinton street, Brooklyn, N. Y., is now located in the Shubert Building, that city.

J. B. Wahlquist, architect, who was formerly located at 24 East 43d street, New York City, is now practicing at 52 Beechwood Terrace, Yonkers, N. Y.

J. H. Gustave Steffens, architect, has removed his office from 870 Fourth avenue, Detroit, Mich., to 355 Collingwood avenue, that city.

B. A. Sellow, architect, has moved his offices from 223 Asylum street, Hartford, Conn., to 721 Main street, that city.

A. Sandegren, architect, 25 North Dearborn street, Chicago, Ill., will move May 1 to 116 East Oak street, that city.

William C. Presto, architect, has moved from 140 South Dearborn street, Chicago, to room 310, 179 West Washington street, that city.

Will H. Willson, architect, is now associated with Wood & Brent, realtors, 713 Lankershim Bldg., Los Angeles, Cal.

XUM

Tabulation of Building Costs

Fourth of THE AMERICAN ARCHITECT'S series of cost tables, figures for which were furnished by Architects throughout the United States, the first compilation appeared in the January 12 issue

Type of Building	Location	Type of Construction	Equipment	Foundations	Total cubic feet	Contract price or bid received	Cost per cubic foot	When figures were taken
Church	Chester, Pa.	Brick walls; reinforced concrete; wood floors; wood roof trusses; slate roof.	Steam heat; electric lights; usual plumbing.	Stone and concrete.	250,000	$98,000	$.392	Mar., 1921
Apartment Building	Long Beach, Cal.	Semi-fireproof; brick walls; floors, wood and cement.	Gas radiators for heat; electric lights; modern plumbing.	Concrete.	132,144	49,240	.373	July, 1920
Store	Long Beach, Cal.	Semi-fireproof; brick walls; wood roof trusses; composition roof. Floors, wood and cement.	Gas radiators for heat; electric lights; modern plumbing; freight elevator.	Concrete.	265,780	32,320	.121	July, 1920
Apartment Building	Savannah, Ga.	Fireproof; concrete; brick and tile walls; steel stud and plaster board partitions. Concrete and tile floors.	Vacuum vapor heat; refrigeration; circulating brine; electric lighting; modern plumbing; deep well water supply; emergency connection to city main; 2 electric elevators.	Reinforced concrete.	807,094	Cost plus fixed fee 473,652	.586	Sept., 1920 Jan., 1921
Store-Offices	Miami, Fla.	Fireproof; concrete and steel; interlocking tile walls; reinforced concrete flat slab floor construction.	Electric lights; no heating; 2 electric elevators.		1,314,000	479,680	.365	Feb., 1921
Boys' Dormitory	Tuscon, Ariz.	Fireproof; concrete; brick walls; hollow tile partitions. Concrete joists with tile between.	Steam heat; central plant; electric lights; 13 showers; 13 water closets; 39 lavatories; 6 drinking fountains; 12 urinals; 1 bath; 3 slop sinks; stand-pipe; trunk lift.	Concrete.	404,916	180,366	.445	Oct., 1920
Suburban Hotel	New York Suburb.	Fireproof; steel and concrete; walls and partitions, tile and plaster block. Floors, concrete, hardwood finish; tiled baths.	Steam heat; electric lights; street service; plumbing, high grade enamelled iron fixtures; 3 electric elevators.	Spred concrete.	1,551,000	1,100,000	.70	Mar., 1921
Grade School	Tuscon, Ariz.	Semi-fireproof; brick walls and tile partitions; wood joists; metal ceilings; tile roof. Corridors and boiler room, concrete.	Direct steam heat; electric lights; usual plumbing.	Concrete.	254,916	69,508	.272	Jan., 1921
Consolidated School	Owensboro, Ky.	Non-fireproof; brick and concrete walls; limestone trimmings. Wood floors deadened. Gymnasium, lunchroom, kitchen.	Steam heat; electric lights with storage battery; usual plumbing.	Concrete.	373,598	74,000	.198	Mar., 1921
High School	Hillsdale, Ill.	Non-fireproof; brick walls; cement and maple floors.	Vapor steam heat; forced ventilation; electric lights; usual plumbing; deep well; electric pump; pressure tank.	Concrete.	284,000	73,000	.257	Mar., 1921
School	Morgan City, La.	Non-fireproof; brick walls; wood floors.	Direct low pressure steam heat; electric lights; usual plumbing.		341,600	66,000	.193	Mar., 1921
Residence	Savannah Ga.	Non-fireproof; walls, brick veneer; wood construction and floors.	Open fireplaces; provision for gas radiators; electric wiring on "knob and tube"; 2 baths.	Concrete and brick.	30,568	12,953	.43	Feb., 1921
School	Baltimore Co., Ind.	Fireproof; reinforced concrete; brick walls; wood and composition floors.	Steam heat; direct and indirect; electric lights; usual plumbing.	Mass concrete.	350,000	168,000	.48	Oct., 1920
Residence	Portland, Maine	Non-fireproof; brick walls; slate roof; tar and gravel deck.	Vapor heat; electric lights; 4 baths; good fixtures.	Concrete to grade; brick to 1st floor.	38,688	5,000	.129	Sept.,
Residence	Birmingham, Ala.	Non-fireproof; frame; cement basement floor; others, wood.	Furnace heat; electric lights; knob and tube wiring; 1 bath room. Medium fixtures.	Rubble.	80,352	43,634	.543	Mar., 1921
Residence	Morgan Field, Ky.	Non-fireproof; brick walls; pressed brick face. Oak floors.	Vapor heat; electric lights; 2 baths; lavatory laundry; high grade fixtures.	Mass concrete.	72,000	27,500	.382	Mar., 1921

Reports of Special Correspondents in Regional Centers

Building Conditions as Viewed by Competent Observers, Gleaned from Sources of Undoubted Authority—Current Prices of Materials, and Statistics of Construction Work now in Progress or Contemplated

THE BUILDING SITUATION in the MIDDLE WEST

(Special Correspondence to THE AMERICAN ARCHITECT*)*

CHICAGO.—Building difficulties with special reference to the labor arguments will come to an acute focus here not later than May 1, according to present calculations. On that date, the contractors of the city propose to begin operating on a new wage scale. The building trades unions have not yet signified their acceptance of the proposed scale and the possibility of a strike is not particularly remote.

The labor issue, which is one of the things which are retarding building in this city, has become increasingly important during recent weeks until a stage has been reached where the resumption of building activity seems to hinge mainly on that point.

The building trades unions are holding out for a wage schedule of $1.25 per hour for skilled labor and $1.00 per hour for unskilled labor. The contention of the contractors' association is that the cost of living has decreased and that the proposed higher rate which was suggested because of increased living costs must also be foregone in view of the readjustment processes which have taken place since the rate was suggested.

The proposal of contractors for a reduction amounts to an ultimatum, and the Central Building Trades Council has submitted a counter-proposal that the entire wage discussion be submitted to a board of arbitration. Contractors object to this on the ground that there is nothing to arbitrate, and thus the matter stands. May 1 is the date on which the contractors propose to put the new rate into effect, and the assumption is that the union builders must accept the wage or face the possibility of an open shop. The matter of a reduced wage schedule has been submitted by referendum to members of the various affiliated unions, and in practically all cases the proposal has been rejected. In view of the fact, however, that a very large percentage of the building trades union members have been without employment for several months, the union leaders find themselves in a bad strategic position in which to combat the offer of plenty of work at a slightly lower wage. Reductions of a similar nature have been accepted by union builders in nearby cities. Kenosha, Wisconsin, and Freeport, Illinois—to mention only two—have already secured a reduction of building labor costs and are now ready to go ahead with whatever building is in contemplation.

Aside from the building labor squabble, chief interest centers this week in the continuance of the joint legislative inquiry of the building tie-up in Chicago. State Senator Dailey, at the head of the committee, has been directing a very vigorous probe into various unhealthy building restrictions, and while the meetings of the committee are executive, the press has nevertheless been able to print rather a complete report of the proceedings.

The committee claims to have discovered a policy of national price fixing of building materials. The regulation is alleged to have been brought about by associations. To be definite, the Chicago Retail Lumber Dealers' Association is one of the organizations into whose methods and policies the committee has already inquired. Associations of brick, stone, gravel, sand and plumbing supply dealers have also earned the uncertain distinction of a survey by the committee.

The so-called "Kelly plan," which originated primarily, it is said, with the lumber dealers, and was named in recognition of its inventor, is said to be applied in whole or in part by other associations. The committee has been directing inquiry upon the assumption that through the use of this and similar plans of quasi-price fixing the associations have been able to exert an unhealthy influence on building materials prices in Chicago.

A Chicago newspaper, quoting Representative W. L. Pierce, one of the investigation committee, outlines the plans thus:

"These local organizations are tied up with the associations of the men from whom they buy their materials, and any one caught selling below stipulated figures has a hard time getting any material to sell after he has disposed of his stock at hand. Witnesses described their entire operations to us, and their stories are that when a dealer sells under

the market price he is warned. The second 'offense' finds him strangely discredited in not only his own community but all over the country.

"How does it happen? Easy. The local organization notifies the association of manufacturers, and when the dealer who has offended seeks additional materials the only reply, whether it comes from Chicago, Texas, or Maine, is that there are none on hand to send him. In the meantime the other dealers continue to get all the materials they want and are able to sell them. The man who sold more cheaply must either agree to obey the rules or get out of business."

Testimony of this nature was given against the Chicago Face Brick Association, some eight or ten members of which were called to testify.

Some very interesting and unusual instances of labor hold-ups on Chicago construction work have also been uncovered by the committee. That no important building in Chicago within the last few years has failed to pay tribute in the form of "graft" is the assertion that has been frequently made during the hearing.

Forty members of one of the building trades unions addressed a request to the committee asking its assistance in getting rid of their president and business agent. The workers asserted that the individual in question was "one of the biggest crooks in Chicago."

The legislative inquiry is covering the whole building situation, and some very big men will be called before the inquiry ends. One of the leading Chicago contractors is said to have left town because he had been tipped off that he was to be called to testify. Contractors and building owners have been rather timid about testifying in many instances, and particularly in reference to alleged "hush money" payments to union leaders.

The discussion between the architects and the Lumbermen's Association of Chicago, which began in a very heated way, has simmered down to nothing at all. F. E. Davidson, president of the Illinois Society of Architects, made the assertion that lumber is still 150 per cent. higher than the peak in 1914. N. A. Mather, president of the Lumbermen's Association, denied this charge vigorously and offered a reward, payable to charity, if Mr. Davidson and his associates could establish proof of a higher level than 64 per cent. above 1914 prices. The offer was seized upon by the architects, and a board of judges was summoned to weigh the respective arguments. At the preliminary hearing, it developed that a basis of comparison could not be agreed upon and the affair was dropped. New differences between certain groups of architects and the retail lumber dealers have since arisen.

The new trouble has arisen from a request by the architects—members of the Illinois Society of Architects—that the local lumber dealers adopt the grading rules of the Forest Products Laboratory in order that building ordinances might be adhered to more strictly. The reply of the lumbermen's committee to that proposal was as follows:

"We will have to be assured by the architects that they will only specify lumber to be furnished by the Chicago yards, no shipment to be made from the mills. You appreciate we would have to have this assurance, as otherwise we could not afford to carry these timbers in stock and then have the timbers shipped in from the mills direct."

Mr. Davidson, serving as chairman of the architects' committee, replied thus:

"If this is the attitude of the lumber interests, then we will forget the entire incident and let every architect do as he pleases. The architects are willing to co-operate, but certainly the lumber interests should meet the committee in the same spirit."

Stripped of its polite phraseology, the proposal and its rejection by the lumber interests indicate that the architects regard the attitude of the lumber interests as being designed to keep Chicago architects from buying no lumber except through local lumber manufacturing representatives.

Prices of lumber and materials have not changed substantially during the past week. There is a very slow downward trend in the lumber market, although there is no official verification of slumping quotations. Present prices are:

Yellow Pine: B. & B. 1-in., $95 to $130, depending on thickness; 2 x 4, No. 1, 10 to 16 ft. length, $51 to $53; 2 x 6, $48; 2 x 8, $50; 2 x 10, $53; 2 x 12, $55; 13-16 x 3 1-4 z & b flat flooring, $85 to $90; 1 x 6, No. 2 common, $48 to $90. *Douglas fir:* 2 4 S, in sizes up to 12 x 12, in length up to 32 ft., $65 to $70; 14 x 14, $68 to $73; 16 x 16, $72 to $75; 18 x 18, $75 to $90. *Hard Maple:* Four 1-4 No. 1 and 2, $135; select, $120 ;No. 1 common, $100; No. 2 common, $65; No. 3 common, $32. *Birch:* Four 1-4 No. 1 and 2, $160; select, $133 to $138; No. 1 common, $95 to $100; No. 2 common, $60 to $65; No. 3 common, $40. *Red Gum:* Four ¼ No. 1 and 2, $150; No. 1 common, $90 to $92; No. 2 common, $45.

Face Brick—Standard, vitrified red, $32.00@34.00; Smooth, Indiana red, $38.00@40.00; Smooth, Ohio red, $38.00@40.00; Smooth, Pennsylvania red, $46.00@48.00; Smooth, buff, $45.00@47.00; Smooth, gray, $47.00@49.00; Rough, buff, $44.00@46.00; Rough, gray, $47.00@49.00; Variegated, rough texture, $34.00@49.00.

Common brick, $12.00@14.00 per M. Portland cement, $2.25 per bbl. Torpedo—Lake and bank

XUM

sand, $3.50 per yd. Crushed stone, gravel, screenings, $3.50 per yd. Hydrated lime, Ohio, paper, $21.00 per ton. Hydrated lime, Ohio, cloth, $20.00 per ton. (Includes sacks at 30c. each). Hydrated lime, Wisconsin, paper, $18.00 per ton. Bulk lime, $1.60 per ton.

John C. Christensen has been appointed architect for the Chicago Board of Education, succeeding Arthur F. Hussander, who has recently resigned. Mr. Christensen was formerly Mr. Hussander's assistant. The Board of Education has a building program for the next three years entailing the expenditure of $20,000,000 for new school buildings.

BUILDING CONDITIONS on the PACIFIC COAST

(*Special Correspondence to* THE AMERICAN ARCHITECT)

SEATTLE.—Due to the apparent compromise between corporation and outside mills on sheets of which official notification has been received on the coast, jobbers believe that the unsettlement in prices of these building essentials is over, and that the apparent purpose of checking the downward tendency and of stabilizing so that building investors can feel safe bids fair of accomplishment.

It was noted by jobbers through the past 60 days of sheet unsettlement that weaknesses were followed immediately by withdrawal of inquiries. It seemed difficult for jobbers to wean buyers of the idea that repeated recessions were not impending. On the new basis of settlement between the groups of eastern mills galvanized sheets are now $6.85 out of the warehouses and blacks are $5.75. Jobbers are convinced that a brisk buying movement will follow if present prices stand steady for 10 days.

Pipe is steady, but there are reports, so far unconfirmed from official sources, that outside mills have reduced prices $10 per ton. Inasmuch as these reports seem to bear the more or less genuine stamp and stocks in warehouse are already fair, jobbers will wait for developments.

There is an abundance of brick, roofing and plaster units. Cement is being accumulated, but coast road building for the year will undoubtedly keep the supply light and prices firm.

Plank and small timbers and big sticks are weak at the fir mills. Railway purchasing agents have kept out of the market on instructions from headquarters in the east owing to the desire to get the lines of a revenue paying basis before authorizing further expenditures, even for maintenance. The heavier cuttings of fir are therefore accumulating. General retail yard or eastern building assortments are steady, with an increasing shortage in vertical grain flooring, finish and long dimension. There seems to be no thought in the West Coast fir producing territory today of any price recessions in fir. A group of wholesalers who two weeks ago sent price lists to eastern buyers showing reductions of $3 per 1,000 feet under the actual cost today for May delivery booked a number of orders which the mills are refusing to sell on the offers. Attempts to bear the market have, therefore, proved futile.

Average sales at the mill bear out the general strong undertone. Flooring sold at $49 in 1 x 4 No. 2 and better with $21 and $23 for the No. 3 stock. Slash grain flooring moved at $18 to $27. Finish $46 to $53. Drop siding left the mills on an average of $20 to $26, boards and shiplap at $12 to $14.50, dimension at $10 to $11.50, plank and small timbers at $15.50 to $19.50 and timbers 32 feet and under at $19 to $22. About 60 per cent. of the fir mills are in operation. Production for the week was 39 per cent. below normal. Orders were firmed for 1,385 carloads 30,000 feet to the car to move by rail into the eastern building trade and 1,385 cars were shipped, leaving an unfilled balance for eastern rail shipment of 3,700 cars.

The fir lumber movement into the Atlantic seaboard territory on the water rate of $20 to New York has been heavy. New business for intercostal account for the week totalled 6,982,252 feet, with shipments for the same period of 11,674,000 feet and an unshipped balance of 56,325,000 feet.

President R. W. Vinnedge, of the West Coast Lumbermen's Association on his return this week from an extensive eastern trip, says that millions of dollars' worth of building throughout the country is projected and awaiting lower construction costs, and that labor is the greatest item and holds a strategic position. He says that if labor generally will accept the reduction of 25 per cent. from peak wages a tremendous building activity will result.

Beezer Bros., architects, Seattle, have been commissioned and are working on plans for a hospital to be built at Marshfield, Ore., for the Sisters of Mercy. The initial units will cost $200,000. It is to be five stories in height, of concrete and brick construction.

A central assembly building for all motor stages operating out of Seattle has been financed in the block between Western avenue and Post street and Marion and Madison street, Seattle. The building is not new. It will have accommodations for discharging and loading 5,000 passengers daily. The controlling corporation has executed a 20-year lease and will make alterations to cost $20,000. Waiting rooms, ticket offices and rest rooms will be provided. A marquise 200 feet long will be erected for protection of passengers in inclement weather.

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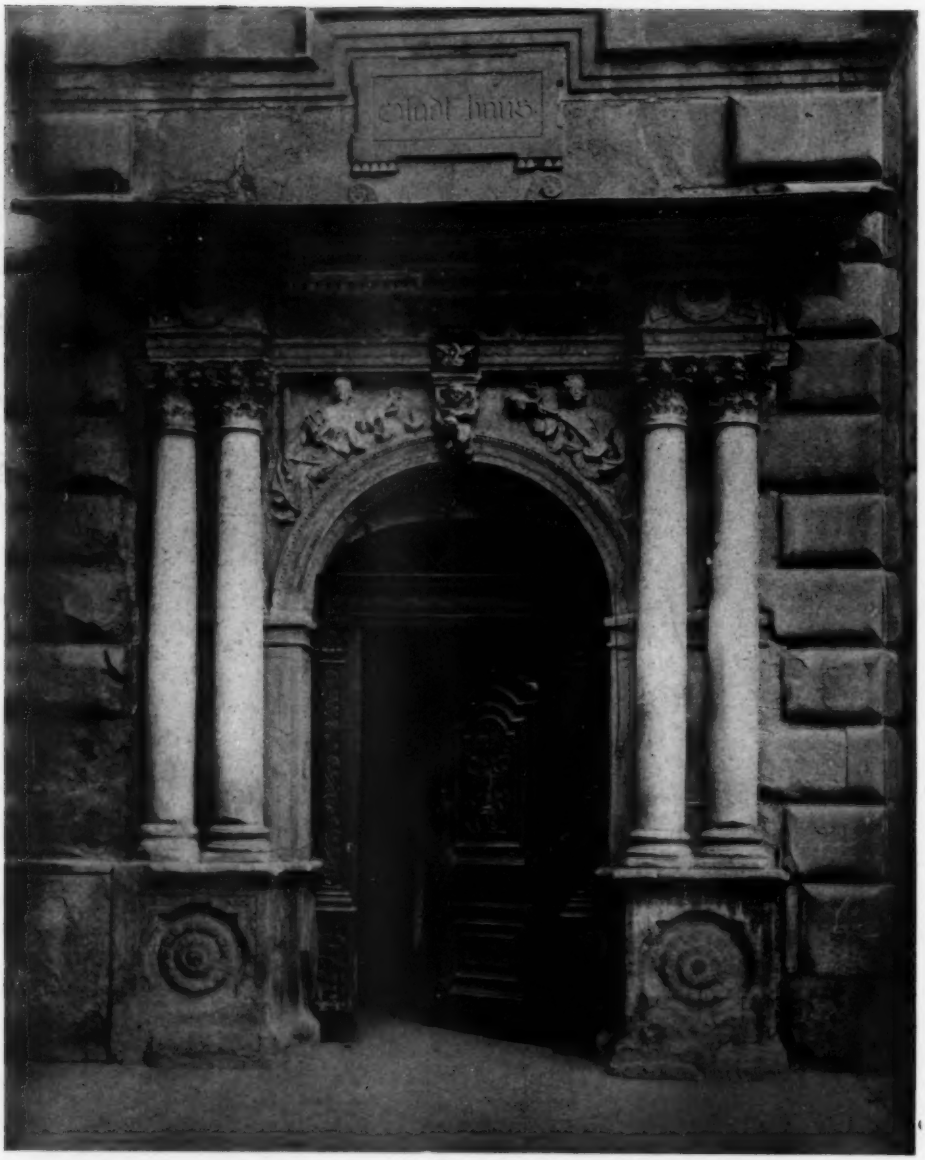

DETAIL OF DOORWAY—RATHAUS, LUCERNE